APPENDIX

Text of Senate Bill No. 697
Chapter 812

An act to add Part 1.98 (commencing with Section 449.10) to Division 1 of the Health and Safety Code, relating to health facilities.

[Approved by Governor September 25, 1994. Filed with Secretary of State September 27, 1994.]

LEGISLATIVE COUNSEL'S DIGEST
SB697, Torres. Health facilities.

Existing law establishes the California Health Policy and Data Advisory Commission to, in part, advise the Office of Statewide Health Planning and Development and the Health and Welfare Agency relating to health policy and the collection of health data.

Existing law, the Voluntary Health Facility and Clinic Philanthropic Support Act, declares that under any reform measure for certain reasons, including, but not limited to, that philanthropy allows voluntary nonprofit institutions to conduct research and to engage in other innovative efforts to improve healthcare, and that philanthropy pays for necessary expenditures that otherwise would have to be paid by patients or by government. The act declares the intent of the Legislature to create an environment in which philanthropy and voluntarism in the healthcare field is encouraged, and exclude certain items constituting gifts or grants from treatment as revenue to health facilities or clinics for the purposes of certain reporting requirements.

This bill would require each hospital, as defined, to reaffirm its mission statement, as defined, that requires its policies to integrate and reflect the public interest by July 1, 1995.

This bill would require each hospital, by January 1, 1996, to complete a community needs assessment, as defined, and by April 1, 1996 adopt a community benefits plan, and to thereafter annually update the community benefits plan.

The bill would require each hospital to file a report on its community benefits plan and the activities undertaken to address community needs with the Statewide Office of Health Planning and Development. The bill would require the statewide office to make the plans available to the public and file a report with the Legislature by October 1, 1997.

The people of the State of California do enact as follows:

SECTION 1. Part 1.98 (commencing with Section 449.10) is added to Division 1 of the Health and Safety Code, to read:

PART 1.98 HOSPITALS: COMMUNITY BENEFITS

449.10. The Legislature finds and declares all of the following:

(a) Private not-for-profit hospitals meet certain needs of their communities through the provision of essential healthcare and other services. Public recognition of their unique status has led to favorable tax treatment by the government. In exchange, nonprofit hospitals assume a social obligation to provide community benefits in the public interest.

(b) Hospitals and the environment in which they operate have undergone dramatic changes. The pace of change will accelerate in response to the healthcare reform. In light of this, significant public benefit would be derived if private not-for-profit hospitals reviewed and reaffirmed periodically their commitment to assist in meeting their communities' health needs by identifying and documenting benefits provided to the communities which they serve.

(c) California's private not-for-profit hospitals provide a wide range of benefits to their communities in addition to those reflected in the financial data reported to the state.

(d) Unreported community benefits that are often provided but not otherwise   reported include, but are not limited to, all of the following:

(1) Community-oriented wellness and health promotion.

(2) Prevention services, including, but not limited to, health screening, immunizations, school exams, and disease counseling education.

(3) Adult day care.

(4) Child care.

(5) Medical research.

(6) Medical education.

(7) Nursing and other professional training.

(8) Home delivered meals to the homebound.

(9) Sponsorship of free food, shelter, and clothing to the homeless.

(10) Outreach clinics in socioeconomically depressed areas.

(e) Direct provision of goods and services, as well as preventive programs, should be emphasized by hospitals in the development of community benefit plans.

449.15. As used in this part, the following terms have the following meanings:

(a) "Community benefits plan" means the written document prepared for annual submission to the Office of Statewide Health Planning and Development that shall include, but shall not be limited to, a description of the activities that the hospital has undertaken in order to address identified community needs within its mission and financial capacity, and the process by which the hospital developed the plan in consultation with the community.

(b) "Community" means the service areas or patient populations for which the hospital provides health care services.

(c) Solely for the planning and reporting purposes of this part, "community benefit" means a hospital's activities that are intended to address community needs and priorities primarily through disease prevention and improvement of health status, including but not limited to, any of the following:

(1) Health care services, rendered to vulnerable populations, including, but not limited to, charity care and the unreimbursed cost of providing services to the uninsured, underinsured, and those eligible for Medi-Cal, Medicare, California Children's Services Program, or county indigent programs.

(2) The unreimbursed cost of services included in subdivision (d) of Section 449.10.

(3) Financial or in-kind support of public health programs.

(4) Donation of funds, property, or other resources that contribute to a community priority.

(5) Health care cost containment.

(6) Enhancement of access to health care or related services that contribute to a healthier community.

(7) Services offered without regard to financial return because they meet a community need in the service area of the hospital, and other services including health promotion, health education, prevention, and social services.

(8) Food, shelter, clothing, education, transportation, and other foods or services that help maintain a person's health.

(d) "Community needs assessment" means the process by which the hospital identifies, for its primary service area as determined by the hospital, unmet community needs.

(e) "Community needs" means those requisites for improvement or maintenance of health status in the community.

(f) "Hospital" means a private not-for-profit acute hospital licensed under subdivision (a), (b), or (f) of Section 1250 and is owned by a corporation that has been determined to be exempt from taxation under the United States Internal Revenue Code. "Hospital" does not mean the following:

(1) Hospitals that are dedicated to serving children and that do not receive direct payment for services to any patient.

(2) Small and rural hospitals as defined in Section 1188.855.

(g) "Mission statement" means a hospital's primary objectives for operation as adopted by its governing body.

(h) "Vulnerable populations" means any population that is exposed to medical or financial risk by virtue of being uninsured, underinsured, or eligible for Medi-Cal, Medicare, California Children's Services Program or county indigent programs.

449.20 Each hospital shall do all of the following:

(a) By July 1, 1995, reaffirm its mission statement that requires its policies integrate and reflect the interest in meeting its responsibilities as a not-for-profit organization.

(b) By January 1, 1996, complete, either alone, in conjunction with other health care providers, or through other organizational arrangements, a community needs assessment evaluation the health needs of the community serviced by the hospital, that includes, but is not limited to, a process for consulting with community groups and local government officials in the identification and prioritization of community needs that the hospital can address directly, in collaboration with others, or through other organizational arrangement. The community needs assessment shall be updated at least once every 3 years.

(c) By April 1, 1996, and annually thereafter adopt and update a community benefits plan for providing community benefits either alone in conjunction with other health care providers, or through organizational arrangements.

(d) Annually submit its community benefits plan, including, but not limited to, the activities that the hospital has undertaken in order to address community needs within its mission and financial capacity to the Office of Statewide Health Planning and Development. The hospital shall, to the extent practicable, assign and report the economic value of community benefits provided in furtherance of its plan. Effective with hospital fiscal years, beginning on or after January 1, 1996, each hospital shall file a copy of the plan with the office not later than 150 days after the hospital's fiscal year ends. The reports filed by the hospitals shall be made available to the public by the office. Hospitals under the common control of a single corporation or another entity may file a consolidated report.

449.25. The hospital shall include all of the following elements in its community benefits plan:

(a) Mechanisms to evaluate the plan's effectiveness including, but not limited to, a method for soliciting the views of the community served by the hospital and identification of community groups and local government officials consulted during the development of the plan.

(b) Measurable objectives to be achieved within specified timeframes.

(c) Community benefits categorized into the following framework:

   (1) Medical care services.
   (2) Other benefits for the vulnerable populations.
   (3) Other benefits for the broader community.
   (4) Health research, education, and training programs.
   (5) Non-quantifiable benefits.

440.30. Nothing in this part shall be construed to authorize or require specific formats for hospital needs assessments, community benefit plans, or reports until recommendations pursuant to Section

449.35 are considered and enacted by the Legislature.

Nothing in this part shall be used to justify the tax-exempt status of a hospital under state law. Nothing in this part shall preclude the office from requiring hospitals to directly report their charity activities.

449.35. The Office of Statewide Health Planning and Development shall prepare and submit a report to the Legislature by October 1, 1997, including all of the following:

(a) The identification of all hospitals that did not file plans on a timely basis.

(b) A statement regarding the most prevalent characteristics of plans in terms of identifying and emphasizing community needs.

(c) Recommendations for standardization of plan formats, and recommendations regarding community benefits and community priorities that should be emphasized. The recommendations shall be developed after consultation with representatives of the hospitals, local governments, and communities.

TECHNICAL REPORT
OBJECTIVE DATA ON SELECTED
HEALTH STATUS INDICATORS

One of the major concerns of health officials is related to the distribution and maintenance of health care services for the community. Health planning officials generally seek 5 kinds of information about a community and its area. The first is *demographics*, which include data on age, sex, and ethnic composition. The second is *socioeconomic*, such as homelessness, unemployment, insurance coverage, poverty level, and level of education, for it has a direct impact on the service utilization. The third is *prevalence* of all the known health problems of all segments of the community, which would include data related to morbidity (disease), natality (birth), and mortality (death); these data form the basis of establishing current patterns and deciding service needs and priorities. The fourth is *utilization* data, which describe current use of existing health services in various health service facilities. These would include statistics on types of hospital admissions, primary care visits and other related data. The fifth is *resources*, which includes reviewing of the inventories of the area resources, mainly in terms of type of service, staff, and cost. This review, however, is beyond the scope of this assessment.

This report presents statistical data analysis on the health status of Orange County residents by analyzing demographic, socioeconomic, prevalence, and utilization data. It includes data for Orange County and 27 nonprofit and for-profit hospital service areas in Orange County. Each hospital service area is further analyzed by zip codes, in order to assist health officials, providers, and the community in identifying problematic areas for targeted actions. Comparative data for Orange County, California, the United States, and Healthy People 2000 Objectives are also provided to determine the health status of each hospital service area and their respective zip codes. The health status indicators used in this report for the analysis are consistent with those developed by the California Department of Health Services in their report *County Health Status Profiles, 1998*.

This report is the product of the Research Center of the Office of Policy Research and Planning Center, Orange County Health Care Agency. The report offers information on selected health status indicators for Orange County demographics, socioeconomic profile, natality, morbidity, behavioral and environmental health, hospitalization, and mortality for each hospital service area at the zip code level, in support of a countywide health assessment process. The assessment is being conducted as a collaborative project by the Orange County Health Care Agency, the Healthcare Association of Southern California, United Way, and other community organizations and is partially underwritten by a grant from The California Endowment Foundation. The Assessment Protocol for Excellence in Public Health has acted as a model for the process. Data contained in this report, along with the data collected in a countywide health survey will provide the basis for action plans to continually improve the health status of Orange County residents. Please note this report is not intended to be a complete picture but an initial sketch of the health status of Orange County for the purpose of identifying potential problematic sub-areas at the zip code level for each of the health status indicators.

Nature and Source of Data

Data analyses in this report are based on information contained in birth, mortality, morbidity, and hospital discharge files. The mortality, morbidity, and hospital admissions statistics presented in this report were compiled in accordance with the World Health Organizations regulations, which specify member nations classify causes of death by the current Manual of the International Classification of Diseases (ICD-9) codes. Data were analyzed for 1994 to 1996.

The birth, morbidity, hospitalization, and mortality data contained in this report is derived from the following:

Orange County birth, death, and morbidity files

Office of Statewide Health Planning and Development hospital discharge files
California Department of Health Services *County Health Status Profiles, 1998*
California Department of Finance
Center for Demographic Research, California State University, Fullerton
Healthcare Association of Southern California

Rates

Two rates are used for mortality indicators in this assessment: crude mortality rate and age-adjusted mortality rate. They are defined as follows:

Crude Mortality Rate - Crude rates are summary rates based on the actual number of events in a total population over a given time period. Since age is the major factor influencing risk of death, the higher the proportion of elderly people in the population, the higher the crude death rate for that population. Crude death rates will differ if the two populations are dissimilar in age composition. The crude death rate represents the actual risk of death in a population. However, since populations vary in composition, differences in crude rate are difficult to interpret. In the following pages the crude death rate indicates the actual risk of death by zip codes for each of the twelve indicators.

Age-adjusted Mortality Rate - Age-adjusted death rates are summary rates that have undergone statistical transformation to permit fair comparison between groups differing in age that significantly affect risk of death. It is a summary rate that has been statistically transformed (adjusted) by applying a standard population to an age-specific rate so that it is independent of the age structure of the particular population being studied. In this report, direct adjustment method was employed using United States population of 1940 as standard, in order to be consistent with the Healthy People 2000 objective rates as well as California and the U.S. rates. The biggest disadvantage of the age-adjusted death rates is that they are fictional rates. The absolute magnitude of the rates is dependent on the standard population chosen. Since the standard population chosen in this report (1940 U.S. standard million population) is the same for all the rates, they provide a fair comparison.

Age-adjusted mortality rates were used in comparing Orange County, California, United States, Healthy People 2000 objectives, and hospital service areas. Crude rates were used for zip code areas and for morbidity.

For computing mortality rates by zip code, a 3-year average was taken as numerator, since the estimated population (denominator) by zip code was available only for 1995. To obtain infant mortality by zip code, the 3-year total number of infant deaths was used as numerator and 3-year total number of live births as denominator. The population used for computing crude death rates in this report is based on 1995 population estimates. The estimates are based on the 1990 census. The age-adjusted rates were computed by the direct method, that is, by applying the age-specific death rates for a given cause of death to the U.S. standard million population of 1940. The age-adjusted rates were based on 10-year age groups.

Please note rates based on less than 20 observations should be interpreted with caution.

Limitations

Like other studies of this nature, this report has its own limitations: for example, in the absence of more current data on the socioeconomic profile, 1990 Orange County census data were used for poverty level status and level of education.

Only selected communicable diseases such as, measles, AIDS, tuberculosis, and syphilis were analyzed from the morbidity files.

Hospital discharge data files provide information only on the individuals receiving medical care as inpatients. Data based on hospital admissions and discharges provide a biased picture of the illnesses in a community. Acute minor illnesses treated in a physician's office or treated in emergency rooms as outpatients and serious chronic diseases, such as cancer and rheumatoid arthritis, followed on an outpatient basis would not appear in prevalence data based on hospital discharge data and would, therefore, be missed.

The analyses of infant mortality statistics are ideally performed using a birth cohort file. These files take all persons born within a certain year and match corresponding death records regardless of date or place of death. The advantage of such files is the availability of birth-related information such as birth weight or the month prenatal care began from the birth certificate combined with information about the circumstances at the time of death reported on the death certificate. However, in the absence of a birth cohort file for Orange County, the infant mortality rate was obtained by using 1994 to 1996 birth and death files separately.

The ideal measurement rate for 3-year averages should be based on the mid-point of the 3-year period (July 1, 1995). Population estimates at the census tract and zip code level are not available for July 1, 1995; therefore January 1, 1995 population estimates were used for rate calculations. Orange County, hospital service area, and zip code rates based on January 1, 1995 population estimates will deviate slightly (less than 1% in most cases) from rates based on the mid-point. Zip codes that experienced significant growth between January 1, 1995 and December 31, 1996 will have rates slightly higher than actual occurrence.

SUMMARY OF HEALTH STATUS INDICATORS

Twenty-four health status indicators have been chosen for this countywide health assessment. This list is not intended to be all inclusive, but rather a broad assessment using indicators of health status in 4 areas: mortality, morbidity, infant mortality, and birth-related health outcomes. They were chosen because the State of California Department of Health Statistics has used them for the last six years as indicators of the health status of the 58 counties in California and because most can be compared to national rates and Healthy People 2000 objectives.

Twelve indicators are associated with mortality. Six mortality indicators are related to behavior that affect an individual's own health and/or the health and life of others in the community. These 6 mortality indicators -- drug-related, firearm injury, homicide, motor vehicle, suicide, and unintentional injury deaths -- are concerns to both public health and behavioral health.

There are 4 morbidity indicators used in this assessment. They are incidence of AIDS, measles, tuberculosis, and syphilis, which are reportable, communicable diseases that represent threats to the public health of the community. All health providers are required to report these diseases to local public health officials, who in turn provide weekly reports to the state and the Centers for Disease Control. Two of these indicators, measles and syphilis rates, have dropped significantly in recent years to the point where the rates in Orange County are less than 1 incident per 1000 persons in the population.

Infant mortality is one of the most devastating events in life. The loss of a child, particularly an infant, affects an entire family like no other death. Great progress has been made within the last half-century to reduce infant deaths, particularly those resulting in premature birth, because of significant advances in medical science, but much is still to be done through education and awareness of prospective parents.

There are 4 birth-related indicators included in this report. Two are related to prenatal care and 2 are related to birth outcomes.

The following page of this report contains a summary of health status indicators showing 1994 to 1996 rates for Orange County, California, and the United States, along with the Healthy People 2000 objectives for 19 of the rates. The summary will be followed by a brief discussion of Orange County's health status based on the comparison of rates.

Sections 4 through 7 contain tables and geographic information system maps for each of these 25 indicators by zip code. The Orange County zip codes are subdivided into 2 groups: those that have a rate lower (better) than the county average and those that have a rate higher (worse) than the county average. These 2 groups are not necessarily equal in number.

Zip codes that have a rate lower (better) than the county average are further subdivided into 2 equal-size groups and are shaded yellow or green. zip codes shaded **yellow** represent the better half of the zip codes with a rate better than the county average. This group would be considered the best performing group, performing significantly better than the county average with regard to a health status indicator rate. Zip codes shaded **green** represent the next best performing group, not as high as the yellow group, but still performing better than the county average for the health status indicator.

Zip codes that have a rate higher (worse) than the county average are further subdivided into 2 equal-size groups and are shaded gray or brown. zip codes shaded **gray** represent the better half of the zip codes with a rate worse than the county average. This group would be considered the third best performing group, performing slightly worse than the county average with regard to a health status indicator rate. Zip codes shaded **brown** represent the worst performing group, performing significantly worse than the county average.

Areas shaded **brown** are considered potential health status indicator problem areas, and are candidates for epidemiological investigations and further action by health care officials and providers.

SUMMARY OF ORANGE COUNTY
HEALTH STATUS INDICATORS

Health Indicators	Orange County	State of California	United States	Healthy People 2000
Mortality[1]				
All deaths	403.6	454.2	503.9	not set
Cerebrovascular disease	23.6	26.3	26.7	20.0
Drug-related	6.0	8.0	5.4	3.0
Female breast cancer	20.1	19.7	21.0	20.6
Firearm injuries	9.8	15.0	13.9	11.6
Heart disease	98.6	100.6	138.3	100.0
Homicide	6.7	11.8	9.4	7.2
All cancer	112.8	115.9	129.9	130.0
Lung cancer	30.1	31.8	39.7	42.0
Motor vehicle	8.8	13.2	16.3	14.2
Suicide	8.6	10.7	11.2	10.5
Unintentional injuries	19.4	26.6	30.5	29.3
Morbidity[2]				
Incidence of AIDS	16.3	27.4	26.0	43.0
Incidence of measles	0.13	0.22	0.11	0.00
Incidence of tuberculosis	12.43	14.40	7.50	3.50
Incidence of syphilis	0.73	1.98	5.71	4.00
Infant Mortality[3]				
All Infant mortality	5.2	7.0	8.0	7.0
Asian and other Pacific islanders	4.8	5.8	N/A.	not set
Black	10.4	15.3	16.5	11.0
Hispanic	4.8	6.4	N/A.	not set
White	5.5	6.3	6.8	not set
Birth-Related				
Births to adolescents[4]	59.3	66.6	56.6	not set
Low birth weight[5]	5.3	6.1	7.3	5.0
Late prenatal care[5]	17.7	20.9	18.7	10.0
Inadequate prenatal care[6]	28.9	31.4	N/A.	not set

Notes:
1. All mortality rates are age-adjusted rates per 100,000 persons using 1940 U.S. standard population.
2. All morbidity rates are crude rates per 100,000 persons.
3. All infant mortality rates are number of occurrences per 1,000 live births.
4. Births to adolescents are the number of births per 1,000 females between the ages of 15 and 19.
5. Low birth weight, late prenatal care and inadequate prenatal care rates are percentages.
6. Inadequate prenatal care is derived using the Kessner index method.

Sources: California Department of Health Services, California Department of Finance, Healthy People 2000, Orange County Health Care Agency

MORTALITY INDICATORS

Mortality

Mortality or death is an event of significant loss to an individual and the community. The major role of the health services is to reduce the risks of untimely deaths through prevention and treatment, in order to assure a healthy and productive life.

Twelve leading causes of mortality were used in this report as the health status indicators to determine the present health status of the community, and to identify the areas of concern for each of these indicators within 27 hospital service areas and their respective zip codes. Six of these indicators are related to the behavior of individuals, and therefore are considered to be highly preventable. Besides causing tragic loss of life, these factors are also responsible for causing considerable amount of acute and chronic morbidity. They are homicide, suicide, firearm injury deaths, drug-related deaths, motor vehicle accident deaths, and unintentional injury deaths, and are concerns to public health, behavioral health, and medical services.

Five death indicators are related to chronic disease conditions. Some of the deaths caused by these disease conditions are known to be preventable by early detection, and perhaps by behavior modifications to some extent. They are diseases of the heart, cerebrovascular disease (stroke), all types of cancer, lung cancer, and breast cancer. 'All causes of death' was used as the twelfth death indicator in this report. In addition to these 12 death indicators, infant mortality was analyzed separately.

All Causes of Death - Deaths due to all causes are analyzed in this category, using ICD-9 codes 001 -E999.

All Cancer Deaths - Cancer is the second leading cause of death in Orange County, California, and the United States, and is not one single disease but a group of more than 100 different diseases, each characterized by the uncontrolled growth of abnormal cells. Cancer is most common in older people; however, it is not a disease limited strictly to the elderly.

Lung Cancer - Of all types of cancer deaths, lung cancer causes the most number of deaths. Smoking is known to be one of the causes of lung cancer.

Breast Cancer - Breast cancer is the leading cause of cancer deaths among women. Early detection through mammograms and periodic breast self-exam is one of the keys to prevention and cure.

Heart Disease - Heart disease is not only the leading cause of mortality but also a leading cause of disability. The major modifiable risk factors for cardiovascular disease are high blood pressure, high cholesterol, and cigarette smoking. Other important risk factors are obesity, physical inactivity, and diabetes mellitus.

Cerebrovascular Disease (Stroke) - Cerebrovascular disease is associated with the disease of blood vessels. According to the medical literature, it is also a major cause of morbidity with approximately 400,000 to 500,000 Americans suffering from nonfatal strokes each year.

Unintentional Injury Deaths - Unintentional injury deaths are caused by accidents and therefore are considered preventable. Motor vehicle crashes account for approximately half the deaths from unintentional injuries; falls rank second followed by poisoning, drowning, and fires.

Motor Vehicle Accident Deaths - Motor vehicle related deaths are highly preventable deaths. Deaths to drivers and passengers of motor vehicles, motorcycle riders and passengers, and pedestrians struck by motor vehicles are covered under this indicator.

Homicide - Homicide is described as a fatal injury inflicted by another person with the intent to cause physical injury and death.

Suicide - Suicide is defined as self-inflicted injury with the intent to kill oneself.

Firearm Injury Deaths - Causes of death attributable to firearm mortality include accidents caused by firearms, suicide and self-inflicted injury by firearms; and assault by firearm including legal intervention.

Drug-Related Deaths - Causes of death attributable to drug induced mortality include drug psychosis, drug dependence, nondependent use of drugs not including alcohol and tobacco. Also, included are accidental poisoning by drugs and medications, suicide by drugs, and assault from poisoning by drugs, and poisoning by drugs and medicaments undetermined whether accidentally or purposely inflicted.

Mortality Data

This section of the report is divided into 2 parts. The first part displays tables showing the leading causes of death in the County by sex and by ethnicity. The second part contains 12 tables and maps for each of the mortality indicators discussed above. These tables and maps display the crude death rates for each geographic zip code area in Orange County. Rates and occurrences from post office box zip codes and community areas wholly contained within a geographic zip code are attributed to the larger geographic zip code.

MORBIDITY INDICATORS

<u>Morbidity (Disease)</u>

The Orange County morbidity files contain data on communicable diseases. These data, by law, are reportable to the local health officer and the State Health Department on a weekly basis. The information is then channeled to the Centers for Disease Control (CDC) in Atlanta, and eventually to the World Health Organization for inclusion in international statistics. Effective control of communicable disease requires that the health officials know the nature and extent of the health problems in their jurisdiction so that they can take appropriate actions. The reporting of disease that originates with physicians and laboratories forms the basis for action by public health officials.

The 4 morbidity indicators used in this report to determine the health status of the community relative to communicable diseases are HIV/AIDS, measles, syphilis, and tuberculosis.

HIV (Human Immunodeficiency Virus) *-* The virus that is known to cause HIV infection is principally transmitted sexually, parenterally (getting infected by blood contact, e.g., dentist's office, surgery, blood transfusion, needle exchange) or perinatally (when infection is passed from mother to infant during conception and delivery). The principal target of HIV is the immune system. Most persons who are at risk of infection are sexually active young men and women. They become ill and die in their prime years of productivity. In most cases, signs of illness attributed to HIV are detected in the late stages of the disease

Measles *-* Measles is also known as rubeola, hard measles, red measles, and morbilli. Measles is an acute and highly communicable viral disease with high fever and red rashes. This disease is more severe in infants and adults. Complications from measles may result from viral replication or bacterial super-infection and include pneumonia and encephalitis. Death from uncomplicated measles is rare. With the spectacular measles epidemic of 1989, 1990, and 1991, this disease, which is almost entirely preventable by immunization, creates a clear challenge to the public health officials, providers, and the community.

Syphilis *-* Syphilis is a sexually transmitted disease (STD) and continues to be among the most important public health problems. In the United States, between 1986 and 1990, increase in the primary and secondary syphilis rate were much more dramatic for women than men. For pregnant women with untreated syphilis, the risk of fetal death is very high. Infants born to women with untreated syphilis may suffer brain damage, blindness, or bone deformities. Congenital syphilis is almost entirely preventable if pregnant women receive appropriate diagnosis and treatment. Congenital syphilis is therefore an important health event that reflects inadequacies in prenatal care and STD control services in the community.

Tuberculosis (TB) – TB is a highly infectious disease caused by a species of *Mycobacterium*. It is characterized by the formation of tubercles in the tissues. It varies widely in its manifestation and has a great tendency to become chronic. Any organ may be affected by it, although the lung is the major seat of the disease.

<u>Morbidity Data</u>

The following pages contain tables and maps for each of the morbidity indicators discussed above. These tables and maps display the crude morbidity rates for each geographic zip code area in Orange County. Rates and occurrences from post office box zip codes and community areas wholly contained within a geographic zip code are attributed to the larger geographic zip code.

YEARS OF POTENTIAL LIFE LOST

Years of Potential Life Lost (YPLL) - Typically the leading causes of death for a population are determined by counts or rates. The procedure of determining the leading causes of death by counts or rates emphasizes the diseases of the elderly. An alternative measure that reflects the mortality trend of younger age groups is the years of potential life lost. This method of measuring mortality provides a more accurate picture of premature mortality in a community by weighing deaths occurring in the younger age groups more than those occurring in the older groups. The Assessment Protocol for Excellence in Public Health utilizes the concept of YPPL as an indicator for the health status of the community. The most commonly used method to compute the YPLL is by finding the difference in years between age 65 and the age of the person who dies before reaching age 65. Under this concept, a person who dies at age 40 has 25 YPPL, and a person who dies at age 65 or older has 0 YPPL.

Based on this concept the following tables display YPPL based on age 65 rank ordered by the leading cause:

Table 9.1:   Years of Productive Life Lost (YPLL65) All Residents, Orange County, 1994-1996
Table 9.2:   Years of Productive Life Lost (YPLL65) All Males, Orange County, 1994-1996
Table 9.3:   Years of Productive Life Lost (YPLL65) All Females, Orange County, 1994-1996
Table 9.4:   Years of Productive Life Lost (YPLL65) All Non-Hispanic Whites, Orange County, 1994-1996
Table 9.5:   Years of Productive Life Lost (YPLL65) All Non-Hispanic Blacks, Orange County, 1994-1996
Table 9.6:   Years of Productive Life Lost (YPLL65) All Hispanics, Orange County, 1994-1996
Table 9.7:   Years of Productive Life Lost (YPLL65) All Southeast Asians, Orange County, 1994-1996
Table 9.8:   Years of Productive Life Lost (YPLL65) All Northeast Asians and Pacific Islanders, Orange County, 1994-1996
Table 9.9   Displays the Years of Productive Life Lost Based on Age 65 by ICD Code Group

An Alternate approach to dealing with this indicator is the concept that age 65 does not accurately express YPPL given today's life expectancies. Age 65 corresponds more to years of productive life lost. Using this concept, additional tables were constructed using age 75 as the basis of YPPL (See tables 9.10 through 9.18)

Orange County Resident Deaths 1994 - 1996
All Residents
Years Productive Life Lost (YPLL65)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 65	Percent of Total YPLL 65	Cum Pct of Total YPLL 65	Mean YPLL 65
1	Cancer	3,790.0	24.59%	15,317.7	17.63%	17.63%	4.04
2	Other Injuries	357.3	2.32%	7,706.0	8.87%	26.50%	21.57
3	Congenital	126.0	0.82%	6,601.3	7.60%	34.10%	52.39
4	AIDS	252.7	1.64%	6,447.7	7.42%	41.52%	25.52
5	Motor Vehicle	230.0	1.49%	6,441.7	7.41%	48.93%	28.01
6	Homicide	164.7	1.07%	6,058.5	6.97%	55.90%	36.79
7	Prematurity	84.7	0.55%	5,461.0	6.29%	62.19%	64.50
8	Suicide	235.7	1.53%	5,007.3	5.76%	67.95%	21.25
9	Ischemic Heart	3,690.0	23.94%	4,296.2	4.94%	72.90%	1.16
10	Other Heart	1,217.7	7.90%	3,710.8	4.27%	77.17%	3.05
11	Chronic Liver	228.7	1.48%	2,112.7	2.43%	79.60%	9.24
12	Neurologic	311.3	2.02%	1,541.3	1.77%	81.37%	4.95
13	Cerebrovascular	942.3	6.11%	1,405.8	1.62%	82.99%	1.49
14	SIDS	21.7	0.14%	1,392.0	1.60%	84.59%	64.25
15	Infectious & Parasitic	98.7	0.64%	1,344.3	1.55%	86.14%	13.63
16	Pneumonia/Influenza	721.7	4.68%	1,133.3	1.30%	87.44%	1.57
17	COPD	778.0	5.05%	1,073.8	1.24%	88.68%	1.38
18	Diabetes	294.3	1.91%	1,026.0	1.18%	89.86%	3.49
19	Other Vessel	500.3	3.25%	851.2	0.98%	90.84%	1.70
20	Ill-defined	30.3	0.20%	848.2	0.98%	91.82%	27.96
21	Nondiabetic endocrine	61.0	0.40%	802.8	0.92%	92.74%	13.16
22	Mental Disorders	181.3	1.18%	800.7	0.92%	93.66%	4.42
23	Digestive	228.7	1.48%	671.2	0.77%	94.44%	2.94
24	Genitourinary	230.7	1.50%	616.5	0.71%	95.14%	2.67
25	Neonatal Complications	9.3	0.06%	576.7	0.66%	95.81%	61.79
26	Misc Perinatal	8.3	0.05%	529.2	0.61%	96.42%	63.50
27	Other Liver	72.3	0.47%	460.0	0.53%	96.95%	6.36
28	Undetermined Injuries	15.0	0.10%	448.5	0.52%	97.46%	29.90
29	Hypertensive	278.0	1.80%	422.2	0.49%	97.95%	1.52
30	Neoplasms	34.0	0.22%	288.3	0.33%	98.28%	8.48
31	Musculoskeletal	56.0	0.36%	280.3	0.32%	98.60%	5.01
32	Blood	53.0	0.34%	266.2	0.31%	98.91%	5.02
33	Other Pulmonary	88.3	0.57%	249.8	0.29%	99.20%	2.83
34	Other Perinatal respiriatory	3.3	0.02%	192.2	0.22%	99.42%	57.65
35	All Others	6.0	0.04%	187.7	0.22%	99.63%	31.28
36	Upper Respiratory	4.7	0.03%	111.8	0.13%	99.76%	23.96
37	Pregnancy & Childbirth	2.7	0.02%	103.3	0.12%	99.88%	38.75
38	Other Perinatal	1.3	0.01%	85.8	0.10%	99.98%	64.38
39	Skin	3.3	0.02%	16.3	0.02%	100.00%	4.90
	Grand Total	15,413.3	100.00%	86,886.3	100.00%		5.64

Note: Other Injuries includes Poisonings (155 deaths, 4,040.5 YPLL, Mean 26.1), Drownings (32.7 deaths, 1,147.7 YPLL, Mean 35.1) and Falls (91.0 deaths, 444.5 YPLL, Mean 4.9).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Orange County Resident Deaths 1994 - 1996
All Males
Years Productive Life Lost (YPLL65)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 65	Percent of Total YPLL 65	Cum Pct of Total YPLL 65	Mean YPLL 65
1	Cancer	1,894.3	24.88%	7,036.0	12.51%	12.51%	3.71
2	AIDS	236.3	3.10%	5,957.7	10.59%	23.10%	25.21
3	Other Injuries	245.7	3.23%	5,856.5	10.41%	33.51%	23.84
4	Homicide	137.7	1.81%	5,220.2	9.28%	42.79%	37.92
5	Motor Vehicle	151.3	1.99%	4,450.3	7.91%	50.70%	29.41
6	Suicide	176.0	2.31%	3,790.3	6.74%	57.44%	21.54
7	Congenital	64.7	0.85%	3,359.2	5.97%	63.41%	51.95
8	Ischemic Heart	1,757.3	23.08%	3,341.0	5.94%	69.35%	1.90
9	Prematurity	42.0	0.55%	2,709.0	4.82%	74.17%	64.50
10	Other Heart	583.7	7.67%	2,625.7	4.67%	78.83%	4.50
11	Chronic Liver	147.0	1.93%	1,535.5	2.73%	81.56%	10.45
12	Neurologic	146.3	1.92%	959.5	1.71%	83.27%	6.56
13	Cerebrovascular	355.3	4.67%	833.7	1.48%	84.75%	2.35
14	SIDS	13.0	0.17%	833.0	1.48%	86.23%	64.08
15	Infectious & Parasitic	51.0	0.67%	764.2	1.36%	87.59%	14.98
16	Pneumonia/Influenza	318.7	4.19%	653.7	1.16%	88.75%	2.05
17	COPD	353.7	4.65%	628.5	1.12%	89.87%	1.78
18	Other Vessel	208.7	2.74%	561.5	1.00%	90.87%	2.69
19	Ill-defined	17.0	0.22%	520.5	0.93%	91.79%	30.62
20	Mental Disorders	83.7	1.10%	516.0	0.92%	92.71%	6.17
21	Diabetes	148.3	1.95%	511.0	0.91%	93.62%	3.44
22	Nondiabetic endocrine	27.3	0.36%	427.0	0.76%	94.38%	15.62
23	Digestive	87.3	1.15%	391.2	0.70%	95.07%	4.48
24	Misc Perinatal	5.0	0.07%	314.3	0.56%	95.63%	62.87
25	Neonatal Complications	5.0	0.07%	309.7	0.55%	96.18%	61.93
26	Genitourinary	91.0	1.20%	303.5	0.54%	96.72%	3.34
27	Undetermined Injuries	8.7	0.11%	295.2	0.52%	97.25%	34.06
28	Hypertensive	114.0	1.50%	283.7	0.50%	97.75%	2.49
29	Other Liver	39.0	0.51%	270.0	0.48%	98.23%	6.92
30	All Others	6.0	0.08%	187.7	0.33%	98.57%	31.28
31	Blood	26.3	0.35%	177.8	0.32%	98.88%	6.75
32	Other Pulmonary	40.0	0.53%	152.0	0.27%	99.15%	3.80
33	Other Perinatal respiriatory	2.3	0.03%	149.2	0.27%	99.42%	63.93
34	Neoplasms	12.3	0.16%	140.5	0.25%	99.67%	11.39
35	Upper Respiratory	2.0	0.03%	89.8	0.16%	99.83%	44.92
36	Musculoskeletal	13.3	0.18%	52.7	0.09%	99.92%	3.95
37	Other Perinatal	0.7	0.01%	43.0	0.08%	100.00%	64.50
38	Skin	1.0	0.01%	2.0	0.00%	100.00%	2.00
39	Pregnancy & Childbirth	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	7,613.0	100.00%	56,252.0	100.00%		7.39

Note: Other Injuries includes Poisonings (120.3 deaths, 3,243.8 YPLL, Mean 27.0), Drownings (21.3 deaths, 758.8 YPLL, Mean 35.6) and Falls (49.0 deaths, 357.8 YPLL, Mean 7.3).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Orange County Resident Deaths 1994 - 1996
All Females
Years Productive Life Lost (YPLL65)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 65	Percent of Total YPLL 65	Cum Pct of Total YPLL 65	Mean YPLL 65
1	Cancer	1,895.7	24.30%	8,281.7	27.05%	27.05%	4.37
2	Congenital	61.0	0.78%	3,220.7	10.52%	37.57%	52.80
3	Prematurity	42.7	0.55%	2,752.0	8.99%	46.56%	64.50
4	Motor Vehicle	78.7	1.01%	1,991.3	6.50%	53.07%	25.31
5	Other Injuries	111.7	1.43%	1,849.5	6.04%	59.11%	16.56
6	Suicide	59.7	0.76%	1,217.0	3.98%	63.09%	20.40
7	Other Heart	634.0	8.13%	1,085.2	3.54%	66.63%	1.71
8	Ischemic Heart	1,932.7	24.78%	955.2	3.12%	69.75%	0.49
9	Homicide	27.0	0.35%	838.3	2.74%	72.49%	31.05
10	Neurologic	165.0	2.12%	581.8	1.90%	74.39%	3.53
11	Infectious & Parasitic	47.7	0.61%	580.2	1.90%	76.28%	12.17
12	Chronic Liver	81.7	1.05%	577.2	1.89%	78.17%	7.07
13	Cerebrovascular	587.0	7.53%	572.2	1.87%	80.04%	0.97
14	SIDS	8.7	0.11%	559.0	1.83%	81.86%	64.50
15	Diabetes	146.0	1.87%	515.0	1.68%	83.55%	3.53
16	AIDS	16.3	0.21%	490.0	1.60%	85.15%	30.00
17	Pneumonia/Influenza	403.0	5.17%	479.7	1.57%	86.71%	1.19
18	COPD	424.3	5.44%	445.3	1.45%	88.17%	1.05
19	Nondiabetic endocrine	33.7	0.43%	375.8	1.23%	89.40%	11.16
20	Ill-defined	13.3	0.17%	327.7	1.07%	90.47%	24.58
21	Genitourinary	139.7	1.79%	313.0	1.02%	91.49%	2.24
22	Other Vessel	291.7	3.74%	289.7	0.95%	92.44%	0.99
23	Mental Disorders	97.7	1.25%	284.7	0.93%	93.37%	2.91
24	Digestive	141.3	1.81%	280.0	0.91%	94.28%	1.98
25	Neonatal Complications	4.3	0.06%	267.0	0.87%	95.15%	61.62
26	Musculoskeletal	42.7	0.55%	227.7	0.74%	95.90%	5.34
27	Misc Perinatal	3.3	0.04%	214.8	0.70%	96.60%	64.45
28	Other Liver	33.3	0.43%	190.0	0.62%	97.22%	5.70
29	Undetermined Injuries	6.3	0.08%	153.3	0.50%	97.72%	24.21
30	Neoplasms	21.7	0.28%	147.8	0.48%	98.20%	6.82
31	Hypertensive	164.0	2.10%	138.5	0.45%	98.66%	0.84
32	Pregnancy & Childbirth	2.7	0.03%	103.3	0.34%	98.99%	38.75
33	Other Pulmonary	48.3	0.62%	97.8	0.32%	99.31%	2.02
34	Blood	26.7	0.34%	88.3	0.29%	99.60%	3.31
35	Other Perinatal respiriatory	1.0	0.01%	43.0	0.14%	99.74%	43.00
36	Other Perinatal	0.7	0.01%	42.8	0.14%	99.88%	64.25
37	Upper Respiratory	2.7	0.03%	22.0	0.07%	99.95%	8.25
38	Skin	2.3	0.03%	14.3	0.05%	100.00%	6.14
39	All Others	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	7,800.0	100.00%	30,612.8	100.00%		3.92

Note: Other Injuries includes Poisonings (34.7 deaths, 796.7 YPLL, Mean 23.0), Drownings (11.3 deaths, 388.8 YPLL, Mean 34.3) and Falls (42.0 deaths, 86.7 YPLL, Mean 2.1)

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Source: Orange County Health Care Agency, Office of Policy Research and Planning, Death Files 1994, 1995 and 1996.

Orange County Resident Deaths 1994 - 1996
All Non-Hispanic Whites
Years Productive Life Lost (YPLL65)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 65	Percent of Total YPLL 65	Cum Pct of Total YPLL 65	Mean YPLL 65
1	Cancer	3,239.0	25.08%	11,116.5	21.97%	21.97%	3.43
2	Other Injuries	262.7	2.03%	4,756.5	9.40%	31.38%	18.11
3	AIDS	176.3	1.37%	4,341.7	8.58%	39.96%	24.62
4	Suicide	194.0	1.50%	3,701.0	7.32%	47.27%	19.08
5	Ischemic Heart	3,273.3	25.34%	3,422.2	6.76%	54.04%	1.05
6	Motor Vehicle	130.7	1.01%	3,243.8	6.41%	60.45%	24.83
7	Other Heart	1,073.0	8.31%	2,565.3	5.07%	65.52%	2.39
8	Congenital	57.7	0.45%	2,536.5	5.01%	70.54%	43.99
9	Prematurity	35.3	0.27%	2,279.0	4.50%	75.04%	64.50
10	Homicide	53.7	0.42%	1,623.2	3.21%	78.25%	30.25
11	Chronic Liver	152.0	1.18%	1,223.3	2.42%	80.67%	8.05
12	Neurologic	277.0	2.14%	911.7	1.80%	82.47%	3.29
13	Cerebrovascular	795.3	6.16%	739.7	1.46%	83.93%	0.93
14	COPD	719.0	5.57%	733.0	1.45%	85.38%	1.02
15	Infectious & Parasitic	57.3	0.44%	658.0	1.30%	86.68%	11.48
16	SIDS	10.0	0.08%	645.0	1.27%	87.96%	64.50
17	Other Vessel	452.3	3.50%	642.3	1.27%	89.23%	1.42
18	Diabetes	210.3	1.63%	629.3	1.24%	90.47%	2.99
19	Pneumonia/Influenza	635.0	4.92%	622.0	1.23%	91.70%	0.98
20	Mental Disorders	158.3	1.23%	603.3	1.19%	92.89%	3.81
21	Ill-defined	21.7	0.17%	515.5	1.02%	93.91%	23.79
22	Nondiabetic endocrine	49.7	0.38%	392.8	0.78%	94.69%	7.91
23	Genitourinary	190.7	1.48%	330.2	0.65%	95.34%	1.73
24	Digestive	196.0	1.52%	327.2	0.65%	95.99%	1.67
25	Hypertensive	229.3	1.78%	273.8	0.54%	96.53%	1.19
26	Other Liver	52.0	0.40%	266.3	0.53%	97.06%	5.12
27	Neonatal Complications	4.3	0.03%	254.2	0.50%	97.56%	58.65
28	Undetermined Injuries	9.3	0.07%	230.5	0.46%	98.01%	24.70
29	Neoplasms	26.0	0.20%	144.0	0.28%	98.30%	5.54
30	Misc Perinatal	2.3	0.02%	143.5	0.28%	98.58%	61.50
31	Other Pulmonary	72.0	0.56%	138.5	0.27%	98.86%	1.92
32	Musculoskeletal	42.7	0.33%	120.3	0.24%	99.09%	2.82
33	Blood	43.3	0.34%	115.7	0.23%	99.32%	2.67
34	All Others	3.3	0.03%	85.7	0.17%	99.49%	25.70
35	Other Perinatal respiriatory	1.7	0.01%	84.8	0.17%	99.66%	50.90
36	Upper Respiratory	4.0	0.03%	69.0	0.14%	99.80%	17.25
37	Other Perinatal	1.0	0.01%	64.5	0.13%	99.92%	64.50
38	Pregnancy & Childbirth	0.7	0.01%	26.0	0.05%	99.97%	39.00
39	Skin	3.0	0.02%	13.0	0.03%	100.00%	4.33
	Grand Total	12,915.3	100.00%	50,588.8	100.00%		3.92

Note: Other Injuries includes Poisonings (111.7 deaths, 2,758.7 YPLL, Mean 24.7), Drownings (15.0 deaths, 464.8 YPLL, Mean 31.0) and Falls (79.0 deaths, 307.8 YPLL, Mean 3.9).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Orange County Resident Deaths 1994 - 1996
All Non-Hispanic Blacks
Years Productive Life Lost (YPLL65)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 65	Percent of Total YPLL 65	Cum Pct of Total YPLL 65	Mean YPLL 65
1	Cancer	35.0	22.39%	329.7	12.99%	12.99%	9.42
2	AIDS	11.3	7.25%	319.7	12.59%	25.58%	28.21
3	Prematurity	4.7	2.99%	301.0	11.86%	37.43%	64.50
4	Homicide	6.7	4.26%	259.0	10.20%	47.64%	38.85
5	Other Injuries	7.7	4.90%	199.7	7.87%	55.50%	26.04
6	Motor Vehicle	5.0	3.20%	169.3	6.67%	62.17%	33.87
7	Other Heart	12.7	8.10%	122.7	4.83%	67.00%	9.68
8	Suicide	2.7	1.71%	87.7	3.45%	70.46%	32.88
9	Ischemic Heart	26.0	16.63%	79.3	3.13%	73.58%	3.05
10	Congenital	1.7	1.07%	73.2	2.88%	76.46%	43.90
11	COPD	4.3	2.77%	65.0	2.56%	79.02%	15.00
12	SIDS	1.0	0.64%	64.5	2.54%	81.57%	64.50
13	Chronic Liver	2.3	1.49%	56.5	2.23%	83.79%	24.21
14	Infectious & Parasitic	2.0	1.28%	47.5	1.87%	85.66%	23.75
15	Cerebrovascular	7.3	4.69%	44.7	1.76%	87.42%	6.09
16	Misc Perinatal	0.7	0.43%	43.0	1.69%	89.12%	64.50
17	Blood	1.0	0.64%	32.3	1.27%	90.39%	32.33
18	Other Vessel	5.0	3.20%	30.0	1.18%	91.57%	6.00
19	Genitourinary	2.0	1.28%	29.0	1.14%	92.71%	14.50
20	Other Liver	1.0	0.64%	23.3	0.92%	93.63%	23.33
21	All Others	0.7	0.43%	22.7	0.89%	94.52%	34.00
22	Hypertensive	4.7	2.99%	22.0	0.87%	95.39%	4.71
23	Ill-defined	0.7	0.43%	21.7	0.85%	96.24%	32.50
24	Upper Respiratory	0.3	0.21%	21.5	0.85%	97.09%	64.50
25	Digestive	1.0	0.64%	21.5	0.85%	97.94%	21.50
26	Diabetes	3.0	1.92%	16.0	0.63%	98.57%	5.33
27	Pneumonia/Influenza	3.3	2.13%	14.3	0.56%	99.13%	4.30
28	Mental Disorders	0.7	0.43%	10.0	0.39%	99.53%	15.00
29	Neurologic	0.7	0.43%	4.3	0.17%	99.70%	6.50
30	Other Pulmonary	0.3	0.21%	4.3	0.17%	99.87%	13.00
31	Skin	0.3	0.21%	3.3	0.13%	100.00%	10.00
32	Neoplasms	0.0	0.00%	-	0.00%	100.00%	0.00
33	Nondiabetic endocrine	0.0	0.00%	-	0.00%	100.00%	0.00
34	Pregnancy & Childbirth	0.0	0.00%	-	0.00%	100.00%	0.00
35	Musculoskeletal	0.7	0.43%	-	0.00%	100.00%	0.00
36	Neonatal Complications	0.0	0.00%	-	0.00%	100.00%	0.00
37	Other Perinatal respiriatory	0.0	0.00%	-	0.00%	100.00%	0.00
38	Other Perinatal	0.0	0.00%	-	0.00%	100.00%	0.00
39	Undetermined Injuries	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	156.3	100.00%	2,538.7	100.00%		16.24

Note: Other Injuries includes Poisonings (4.7 deaths, 128.3 YPLL, Mean 27.5), Drownings (1.0 deaths, 28.7 YPLL, Mean 28.7) and Falls (0.7 deaths, 0.0 YPLL, Mean 0.0).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Orange County Resident Deaths 1994 - 1996
All Hispanics
Years Productive Life Lost (YPLL65)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 65	Percent of Total YPLL 65	Cum Pct of Total YPLL 65	Mean YPLL 65
1	Homicide	88.0	6.31%	3,572.7	14.06%	14.06%	40.60
2	Congenital	52.3	3.75%	3,168.5	12.47%	26.53%	60.54
3	Prematurity	36.7	2.63%	2,365.0	9.31%	35.83%	64.50
4	Other Injuries	67.3	4.83%	2,256.5	8.88%	44.71%	33.51
5	Cancer	255.3	18.31%	2,239.5	8.81%	53.52%	8.77
6	Motor Vehicle	64.3	4.61%	2,198.8	8.65%	62.17%	34.18
7	AIDS	57.0	4.09%	1,576.3	6.20%	68.38%	27.65
8	Suicide	22.7	1.63%	784.0	3.08%	71.46%	34.59
9	Chronic Liver	57.3	4.11%	662.7	2.61%	74.07%	11.56
10	Other Heart	77.0	5.52%	612.7	2.41%	76.48%	7.96
11	SIDS	8.3	0.60%	532.0	2.09%	78.57%	63.84
12	Neurologic	22.3	1.60%	503.7	1.98%	80.55%	22.55
13	Infectious & Parasitic	16.3	1.17%	481.2	1.89%	82.45%	29.46
14	Ischemic Heart	208.0	14.91%	433.0	1.70%	84.15%	2.08
15	Cerebrovascular	64.3	4.61%	425.8	1.68%	85.83%	6.62
16	Diabetes	56.3	4.04%	338.3	1.33%	87.16%	6.01
17	Pneumonia/Influenza	45.3	3.25%	323.3	1.27%	88.43%	7.13
18	Nondiabetic endocrine	7.7	0.55%	301.7	1.19%	89.62%	39.35
19	Ill-defined	6.0	0.43%	285.7	1.12%	90.74%	47.61
20	Digestive	18.3	1.31%	250.3	0.99%	91.73%	13.65
21	Misc Perinatal	3.7	0.26%	236.5	0.93%	92.66%	64.50
22	Neonatal Complications	3.3	0.24%	215.0	0.85%	93.50%	64.50
23	Mental Disorders	16.3	1.17%	184.0	0.72%	94.23%	11.27
24	Undetermined Injuries	4.0	0.29%	181.0	0.71%	94.94%	45.25
25	Genitourinary	21.0	1.51%	159.5	0.63%	95.57%	7.60
26	Musculoskeletal	8.7	0.62%	138.7	0.55%	96.11%	16.00
27	Neoplasms	6.3	0.45%	136.7	0.54%	96.65%	21.58
28	Other Liver	12.3	0.88%	136.0	0.54%	97.19%	11.03
29	COPD	22.3	1.60%	127.3	0.50%	97.69%	5.70
30	Other Vessel	26.0	1.86%	115.5	0.45%	98.14%	4.44
31	Other Perinatal respiriatory	1.3	0.10%	85.8	0.34%	98.48%	64.38
32	Blood	4.7	0.33%	82.7	0.33%	98.80%	17.71
33	Other Pulmonary	10.7	0.76%	79.3	0.31%	99.12%	7.44
34	All Others	1.7	0.12%	66.7	0.26%	99.38%	40.00
35	Hypertensive	19.3	1.39%	62.0	0.24%	99.62%	3.21
36	Pregnancy & Childbirth	1.3	0.10%	53.3	0.21%	99.83%	40.00
37	Upper Respiratory	0.3	0.02%	21.3	0.08%	99.92%	64.00
38	Other Perinatal	0.3	0.02%	21.3	0.08%	100.00%	64.00
39	Skin	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	1,394.7	100.00%	25,414.3	100.00%		18.22

Note: Other Injuries includes Poisonings (35 deaths, 1,050.2 YPLL, Mean 30.0), Drownings (9.3 deaths, 436.8 YPLL, Mean 46.8) and Falls (7.7 deaths, 124.3 YPLL, Mean 16.2).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Source: Orange County Health Care Agency, Office of Policy Research and Planning, Death Files 1994, 1995 and 1996.

Orange County Resident Deaths 1994 - 1996
All South East Asians
Years Productive Life Lost (YPLL65)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 65	Percent of Total YPLL 65	Cum Pct of Total YPLL 65	Mean YPLL 65
1	Cancer	86.3	26.87%	620.7	16.51%	16.51%	7.19
2	Homicide	10.7	3.32%	436.3	11.61%	28.12%	40.91
3	Motor Vehicle	13.7	4.25%	421.7	11.22%	39.34%	30.85
4	Prematurity	5.7	1.76%	365.5	9.73%	49.07%	64.50
5	Congenital	4.7	1.45%	257.7	6.86%	55.92%	55.21
6	Other Injuries	6.7	2.07%	227.8	6.06%	61.99%	34.18
7	Suicide	7.3	2.28%	224.7	5.98%	67.96%	30.64
8	Other Heart	17.3	5.39%	193.2	5.14%	73.10%	11.14
9	Ischemic Heart	50.3	15.66%	126.7	3.37%	76.47%	2.52
10	Cerebrovascular	25.7	7.99%	102.3	2.72%	79.20%	3.99
11	SIDS	1.3	0.41%	86.0	2.29%	81.49%	64.50
12	Infectious & Parasitic	12.3	3.84%	75.7	2.01%	83.50%	6.14
13	COPD	12.3	3.84%	55.3	1.47%	84.97%	4.49
14	AIDS	1.7	0.52%	53.3	1.42%	86.39%	32.00
15	Chronic Liver	6.3	1.97%	51.7	1.37%	87.76%	8.16
16	Pneumonia/Influenza	10.3	3.22%	49.8	1.33%	89.09%	4.82
17	Digestive	4.3	1.35%	48.2	1.28%	90.37%	11.12
18	Genitourinary	7.7	2.39%	46.3	1.23%	91.61%	6.04
19	Neonatal Complications	0.7	0.21%	43.0	1.14%	92.75%	64.50
20	Misc Perinatal	0.7	0.21%	43.0	1.14%	93.89%	64.50
21	Nondiabetic endocrine	2.0	0.62%	40.5	1.08%	94.97%	20.25
22	Neurologic	2.7	0.83%	40.3	1.07%	96.04%	15.13
23	Hypertensive	7.7	2.39%	22.7	0.60%	96.65%	2.96
24	Blood	1.0	0.31%	21.5	0.57%	97.22%	21.50
25	Other Perinatal respiriatory	0.3	0.10%	21.5	0.57%	97.79%	64.50
26	Other Liver	2.7	0.83%	15.7	0.42%	98.21%	5.88
27	Diabetes	8.3	2.59%	15.3	0.41%	98.62%	1.84
28	Other Vessel	5.0	1.56%	15.3	0.41%	99.02%	3.07
29	Pregnancy & Childbirth	0.3	0.10%	10.7	0.28%	99.31%	32.00
30	Musculoskeletal	1.7	0.52%	9.3	0.25%	99.56%	5.60
31	Ill-defined	0.3	0.10%	8.7	0.23%	99.79%	26.00
32	Other Pulmonary	1.0	0.31%	8.0	0.21%	100.00%	8.00
33	Neoplasms	0.3	0.10%	-	0.00%	100.00%	0.00
34	Mental Disorders	1.3	0.41%	-	0.00%	100.00%	0.00
35	Upper Respiratory	0.0	0.00%	-	0.00%	100.00%	0.00
36	Skin	0.0	0.00%	-	0.00%	100.00%	0.00
37	Other Perinatal	0.0	0.00%	-	0.00%	100.00%	0.00
38	Undetermined Injuries	0.7	0.21%	-	0.00%	100.00%	0.00
39	All Others	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	321.3	100.00%	3,758.3	100.00%		11.70

Note: Other Injuries includes Poisonings (1.3 deaths, 33.3 YPLL, Mean 25.0), Drownings (4.3 deaths, 81.0 YPLL, Mean 18.7) and Falls (2.3 deaths, 4.0 YPLL, Mean 1.7).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Orange County Resident Deaths 1994 - 1996
All North East Asians and Pacific Islanders
Years Productive Life Lost (YPLL65)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 65	Percent of Total YPLL 65	Cum Pct of Total YPLL 65	Mean YPLL 65
1	Cancer	151.3	29.58%	804.7	23.31%	23.31%	5.32
2	Congenital	7.7	1.50%	436.5	12.64%	35.96%	56.93
3	Motor Vehicle	14.3	2.80%	340.3	9.86%	45.81%	23.74
4	Suicide	7.0	1.37%	171.7	4.97%	50.79%	24.52
5	Other Injuries	10.0	1.95%	171.0	4.95%	55.74%	17.10
6	Other Heart	28.3	5.54%	158.3	4.59%	60.33%	5.59
7	Ischemic Heart	97.3	19.02%	149.7	4.34%	64.66%	1.54
8	Prematurity	2.0	0.39%	129.0	3.74%	68.40%	64.50
9	Homicide	3.0	0.59%	110.3	3.20%	71.60%	36.78
10	AIDS	4.7	0.91%	102.0	2.95%	74.55%	21.86
11	COPD	17.3	3.39%	93.2	2.70%	77.25%	5.38
12	Cerebrovascular	41.0	8.01%	92.3	2.67%	79.92%	2.25
13	Pneumonia/Influenza	24.0	4.69%	76.0	2.20%	82.13%	3.17
14	Infectious & Parasitic	10.3	2.02%	73.0	2.11%	84.24%	7.06
15	Chronic Liver	8.3	1.63%	68.2	1.97%	86.22%	8.18
16	Misc Perinatal	1.0	0.20%	63.2	1.83%	88.05%	63.17
17	Neurologic	7.3	1.43%	59.7	1.73%	89.77%	8.14
18	Nondiabetic endocrine	1.0	0.20%	45.5	1.32%	91.09%	45.50
19	Neonatal Complications	0.7	0.13%	43.0	1.25%	92.34%	64.50
20	Hypertensive	15.7	3.06%	38.0	1.10%	93.44%	2.43
21	Undetermined Injuries	0.7	0.13%	30.0	0.87%	94.31%	45.00
22	Other Vessel	10.3	2.02%	28.7	0.83%	95.14%	2.77
23	Diabetes	14.3	2.80%	23.7	0.69%	95.82%	1.65
24	Digestive	8.3	1.63%	21.7	0.63%	96.45%	2.60
25	SIDS	0.3	0.07%	21.5	0.62%	97.07%	64.50
26	Other Liver	4.3	0.85%	18.7	0.54%	97.61%	4.31
27	Genitourinary	7.0	1.37%	18.7	0.54%	98.16%	2.67
28	Blood	2.7	0.52%	14.0	0.41%	98.56%	5.25
29	Pregnancy & Childbirth	0.3	0.07%	13.3	0.39%	98.95%	40.00
30	All Others	0.3	0.07%	12.7	0.37%	99.31%	38.00
31	Musculoskeletal	2.3	0.46%	12.0	0.35%	99.66%	5.14
32	Ill-defined	0.3	0.07%	6.3	0.18%	99.85%	19.00
33	Mental Disorders	4.0	0.78%	3.3	0.10%	99.94%	0.83
34	Other Pulmonary	3.3	0.65%	2.0	0.06%	100.00%	0.60
35	Neoplasms	0.7	0.13%	-	0.00%	100.00%	0.00
36	Upper Respiratory	0.0	0.00%	-	0.00%	100.00%	0.00
37	Skin	0.0	0.00%	-	0.00%	100.00%	0.00
38	Other Perinatal respiriatory	0.0	0.00%	-	0.00%	100.00%	0.00
39	Other Perinatal	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	511.7	100.00%	3,452.0	100.00%		6.75

Note: Other Injuries includes Poisonings (2.0 deaths, 66.0 YPLL, Mean 33.0), Drownings (2.0 deaths, 84.0 YPLL, Mean 42.0) and Falls (1.0 deaths, 8.0 YPLL, Mean 8.0).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Source: Orange County Health Care Agency, Office of Policy Research and Planning, Death Files 1994, 1995 and 1996.

Orange County Resident Deaths 1994 - 1996
All Residents
Years Potential Life Lost (YPLL75)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 75	Percent of Total YPLL 75	Cum Pct of Total YPLL 75	Mean YPLL 75
1	Cancer	3,790.0	24.59%	33,231.0	23.11%	23.11%	8.77
2	Ischemic Heart	3,690.0	23.94%	12,039.2	8.37%	31.49%	3.26
3	Other Injuries	357.3	2.32%	10,438.0	7.26%	38.75%	29.21
4	AIDS	252.7	1.64%	8,965.7	6.24%	44.98%	35.48
5	Motor Vehicle	230.0	1.49%	8,470.7	5.89%	50.88%	36.83
6	Congenital	126.0	0.82%	7,802.0	5.43%	56.30%	61.92
7	Homicide	164.7	1.07%	7,676.2	5.34%	61.64%	46.62
8	Other Heart	1,217.7	7.90%	7,208.2	5.01%	66.66%	5.92
9	Suicide	235.7	1.53%	7,037.0	4.89%	71.55%	29.86
10	Prematurity	84.7	0.55%	6,307.7	4.39%	75.94%	74.50
11	Chronic Liver	228.7	1.48%	3,860.7	2.69%	78.62%	16.88
12	Cerebrovascular	942.3	6.11%	3,194.2	2.22%	80.84%	3.39
13	COPD	778.0	5.05%	2,933.5	2.04%	82.88%	3.77
14	Neurologic	311.3	2.02%	2,341.7	1.63%	84.51%	7.52
15	Diabetes	294.3	1.91%	2,216.0	1.54%	86.05%	7.53
16	Pneumonia/Influenza	721.7	4.68%	2,051.3	1.43%	87.48%	2.84
17	Infectious & Parasitic	98.7	0.64%	1,976.0	1.37%	88.86%	20.03
18	Other Vessel	500.3	3.25%	1,865.5	1.30%	90.15%	3.73
19	SIDS	21.7	0.14%	1,608.7	1.12%	91.27%	74.25
20	Mental Disorders	181.3	1.18%	1,370.3	0.95%	92.23%	7.56
21	Digestive	228.7	1.48%	1,271.2	0.88%	93.11%	5.56
22	Genitourinary	230.7	1.50%	1,153.2	0.80%	93.91%	5.00
23	Nondiabetic endocrine	61.0	0.40%	1,147.5	0.80%	94.71%	18.81
24	Ill-defined	30.3	0.20%	1,085.5	0.76%	95.46%	35.79
25	Hypertensive	278.0	1.80%	997.8	0.69%	96.16%	3.59
26	Other Liver	72.3	0.47%	849.3	0.59%	96.75%	11.74
27	Neonatal Complications	9.3	0.06%	670.0	0.47%	97.22%	71.79
28	Misc Perinatal	8.3	0.05%	612.5	0.43%	97.64%	73.50
29	Undetermined Injuries	15.0	0.10%	576.5	0.40%	98.04%	38.43
30	Musculoskeletal	56.0	0.36%	526.3	0.37%	98.41%	9.40
31	Other Pulmonary	88.3	0.57%	525.5	0.37%	98.77%	5.95
32	Blood	53.0	0.34%	463.2	0.32%	99.10%	8.74
33	Neoplasms	34.0	0.22%	430.3	0.30%	99.40%	12.66
34	All Others	6.0	0.04%	243.3	0.17%	99.56%	40.56
35	Other Perinatal respiriatory	3.3	0.02%	222.2	0.15%	99.72%	66.65
36	Upper Respiratory	4.7	0.03%	143.5	0.10%	99.82%	30.75
37	Pregnancy & Childbirth	2.7	0.02%	130.0	0.09%	99.91%	48.75
38	Other Perinatal	1.3	0.01%	99.2	0.07%	99.98%	74.38
39	Skin	3.3	0.02%	31.0	0.02%	100.00%	9.30
	Grand Total	15,413.3	100.00%	143,771.3	100.00%		9.33

Note: Other Injuries includes Poisonings (155 deaths, 5,572.5 YPLL, Mean 36.0), Drownings (32.7 deaths, 1,427.7 YPLL, Mean 43.7) and Falls (91.0 deaths, 736.2 YPLL, Mean 8.1).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Orange County Resident Deaths 1994 - 1996
All Males
Years Potential Life Lost (YPLL75)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 75	Percent of Total YPLL 75	Cum Pct of Total YPLL 75	Mean YPLL 75
1	Cancer	1,894.3	24.88%	16,074.3	17.61%	17.61%	8.49
2	Ischemic Heart	1,757.3	23.08%	8,847.7	9.69%	27.30%	5.03
3	AIDS	236.3	3.10%	8,312.3	9.11%	36.41%	35.17
4	Other Injuries	245.7	3.23%	7,920.2	8.68%	45.08%	32.24
5	Homicide	137.7	1.81%	6,589.8	7.22%	52.30%	47.87
6	Motor Vehicle	151.3	1.99%	5,825.0	6.38%	58.68%	38.49
7	Suicide	176.0	2.31%	5,302.7	5.81%	64.49%	30.13
8	Other Heart	583.7	7.67%	5,002.3	5.48%	69.97%	8.57
9	Congenital	64.7	0.85%	3,978.2	4.36%	74.33%	61.52
10	Prematurity	42.0	0.55%	3,129.0	3.43%	77.76%	74.50
11	Chronic Liver	147.0	1.93%	2,740.8	3.00%	80.76%	18.65
12	Cerebrovascular	355.3	4.67%	1,798.7	1.97%	82.73%	5.06
13	COPD	353.7	4.65%	1,570.8	1.72%	84.45%	4.44
14	Neurologic	146.3	1.92%	1,396.5	1.53%	85.98%	9.54
15	Pneumonia/Influenza	318.7	4.19%	1,183.3	1.30%	87.28%	3.71
16	Diabetes	148.3	1.95%	1,166.0	1.28%	88.55%	7.86
17	Other Vessel	208.7	2.74%	1,154.8	1.27%	89.82%	5.53
18	Infectious & Parasitic	51.0	0.67%	1,110.8	1.22%	91.04%	21.78
19	SIDS	13.0	0.17%	963.0	1.05%	92.09%	74.08
20	Mental Disorders	83.7	1.10%	901.7	0.99%	93.08%	10.78
21	Digestive	87.3	1.15%	706.8	0.77%	93.85%	8.09
22	Ill-defined	17.0	0.22%	675.2	0.74%	94.59%	39.72
23	Hypertensive	114.0	1.50%	636.0	0.70%	95.29%	5.58
24	Nondiabetic endocrine	27.3	0.36%	612.0	0.67%	95.96%	22.39
25	Genitourinary	91.0	1.20%	570.2	0.62%	96.58%	6.27
26	Other Liver	39.0	0.51%	510.0	0.56%	97.14%	13.08
27	Undetermined Injuries	8.7	0.11%	371.8	0.41%	97.55%	42.90
28	Misc Perinatal	5.0	0.07%	364.3	0.40%	97.95%	72.87
29	Neonatal Complications	5.0	0.07%	359.7	0.39%	98.34%	71.93
30	Blood	26.3	0.35%	306.8	0.34%	98.68%	11.65
31	Other Pulmonary	40.0	0.53%	302.0	0.33%	99.01%	7.55
32	All Others	6.0	0.08%	243.3	0.27%	99.28%	40.56
33	Neoplasms	12.3	0.16%	211.2	0.23%	99.51%	17.12
34	Other Perinatal respiriatory	2.3	0.03%	172.5	0.19%	99.70%	73.93
35	Musculoskeletal	13.3	0.18%	109.3	0.12%	99.82%	8.20
36	Upper Respiratory	2.0	0.03%	108.2	0.12%	99.94%	54.08
37	Other Perinatal	0.7	0.01%	49.7	0.05%	99.99%	74.50
38	Skin	1.0	0.01%	8.7	0.01%	100.00%	8.67
39	Pregnancy & Childbirth	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	7,613.0	100.00%	91,285.7	100.00%		11.99

Note: Other Injuries includes Poisonings (120.3 deaths, 4,442.2 YPLL, Mean 36.9), Drownings (21.3 deaths, 952.5 YPLL, Mean 44.6) and Falls (49.0 deaths, 563.2 YPLL, Mean 11.5).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Orange County Resident Deaths 1994 - 1996
All Females
Years Potential Life Lost (YPLL75)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 75	Percent of Total YPLL 75	Cum Pct of Total YPLL 75	Mean YPLL 75
1	Cancer	1,895.7	24.30%	17,156.7	32.70%	32.70%	9.05
2	Congenital	61.0	0.78%	3,799.0	7.24%	39.95%	62.28
3	Ischemic Heart	1,932.7	24.78%	3,191.5	6.08%	46.03%	1.65
4	Prematurity	42.7	0.55%	3,178.7	6.06%	52.09%	74.50
5	Motor Vehicle	78.7	1.01%	2,645.7	5.04%	57.13%	33.63
6	Other Injuries	111.7	1.43%	2,517.8	4.80%	61.93%	22.55
7	Other Heart	634.0	8.13%	2,205.8	4.20%	66.14%	3.48
8	Suicide	59.7	0.76%	1,734.3	3.31%	69.44%	29.07
9	Cerebrovascular	587.0	7.53%	1,395.5	2.66%	72.10%	2.38
10	COPD	424.3	5.44%	1,362.7	2.60%	74.70%	3.21
11	Chronic Liver	81.7	1.05%	1,119.8	2.13%	76.83%	13.71
12	Homicide	27.0	0.35%	1,086.3	2.07%	78.90%	40.23
13	Diabetes	146.0	1.87%	1,050.0	2.00%	80.91%	7.19
14	Neurologic	165.0	2.12%	945.2	1.80%	82.71%	5.73
15	Pneumonia/Influenza	403.0	5.17%	868.0	1.65%	84.36%	2.15
16	Infectious & Parasitic	47.7	0.61%	865.2	1.65%	86.01%	18.15
17	Other Vessel	291.7	3.74%	710.7	1.35%	87.37%	2.44
18	AIDS	16.3	0.21%	653.3	1.25%	88.61%	40.00
19	SIDS	8.7	0.11%	645.7	1.23%	89.84%	74.50
20	Genitourinary	139.7	1.79%	583.0	1.11%	90.95%	4.17
21	Digestive	141.3	1.81%	564.3	1.08%	92.03%	3.99
22	Nondiabetic endocrine	33.7	0.43%	535.5	1.02%	93.05%	15.91
23	Mental Disorders	97.7	1.25%	468.7	0.89%	93.94%	4.80
24	Musculoskeletal	42.7	0.55%	417.0	0.79%	94.74%	9.77
25	Ill-defined	13.3	0.17%	410.3	0.78%	95.52%	30.78
26	Hypertensive	164.0	2.10%	361.8	0.69%	96.21%	2.21
27	Other Liver	33.3	0.43%	339.3	0.65%	96.86%	10.18
28	Neonatal Complications	4.3	0.06%	310.3	0.59%	97.45%	71.62
29	Misc Perinatal	3.3	0.04%	248.2	0.47%	97.92%	74.45
30	Other Pulmonary	48.3	0.62%	223.5	0.43%	98.35%	4.62
31	Neoplasms	21.7	0.28%	219.2	0.42%	98.77%	10.12
32	Undetermined Injuries	6.3	0.08%	204.7	0.39%	99.16%	32.32
33	Blood	26.7	0.34%	156.3	0.30%	99.45%	5.86
34	Pregnancy & Childbirth	2.7	0.03%	130.0	0.25%	99.70%	48.75
35	Other Perinatal respiriatory	1.0	0.01%	49.7	0.09%	99.80%	49.67
36	Other Perinatal	0.7	0.01%	49.5	0.09%	99.89%	74.25
37	Upper Respiratory	2.7	0.03%	35.3	0.07%	99.96%	13.25
38	Skin	2.3	0.03%	22.3	0.04%	100.00%	9.57
39	All Others	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	7,800.0	100.00%	52,460.8	100.00%		6.73

Note: Other Injuries includes Poisonings (34.7 deaths, 1,130.3 YPLL, Mean 32.6), Drownings (11.3 deaths, 475.2 YPLL, Mean 41.9) and Falls (42.0 deaths, 173.0 YPLL, Mean 4.1)

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Source: Orange County Health Care Agency, Office of Policy Research and Planning, Death Files 1994, 1995 and 1996.

Orange County Resident Deaths 1994 - 1996
All Non-Hispanic Whites
Years Potential Life Lost (YPLL75)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 75	Percent of Total YPLL 75	Cum Pct of Total YPLL 75	Mean YPLL 75
1	Cancer	3,239.0	25.08%	25,585.2	27.72%	27.72%	7.90
2	Ischemic Heart	3,273.3	25.34%	9,756.2	10.57%	38.28%	2.98
3	Other Injuries	262.7	2.03%	6,638.8	7.19%	45.48%	25.27
4	AIDS	176.3	1.37%	6,098.7	6.61%	52.08%	34.59
5	Other Heart	1,073.0	8.31%	5,344.7	5.79%	57.87%	4.98
6	Suicide	194.0	1.50%	5,329.7	5.77%	63.65%	27.47
7	Motor Vehicle	130.7	1.01%	4,331.5	4.69%	68.34%	33.15
8	Congenital	57.7	0.45%	3,063.2	3.32%	71.66%	53.12
9	Prematurity	35.3	0.27%	2,632.3	2.85%	74.51%	74.50
10	COPD	719.0	5.57%	2,404.7	2.60%	77.11%	3.34
11	Chronic Liver	152.0	1.18%	2,349.7	2.55%	79.66%	15.46
12	Homicide	53.7	0.42%	2,132.5	2.31%	81.97%	39.74
13	Cerebrovascular	795.3	6.16%	1,912.3	2.07%	84.04%	2.40
14	Neurologic	277.0	2.14%	1,534.0	1.66%	85.70%	5.54
15	Other Vessel	452.3	3.50%	1,489.7	1.61%	87.31%	3.29
16	Diabetes	210.3	1.63%	1,376.7	1.49%	88.81%	6.55
17	Pneumonia/Influenza	635.0	4.92%	1,306.7	1.42%	90.22%	2.06
18	Mental Disorders	158.3	1.23%	1,054.7	1.14%	91.36%	6.66
19	Infectious & Parasitic	57.3	0.44%	982.7	1.06%	92.43%	17.14
20	Digestive	196.0	1.52%	781.2	0.85%	93.27%	3.99
21	SIDS	10.0	0.08%	745.0	0.81%	94.08%	74.50
22	Genitourinary	190.7	1.48%	676.5	0.73%	94.81%	3.55
23	Hypertensive	229.3	1.78%	672.8	0.73%	95.54%	2.93
24	Ill-defined	21.7	0.17%	670.8	0.73%	96.27%	30.96
25	Nondiabetic endocrine	49.7	0.38%	633.5	0.69%	96.96%	12.76
26	Other Liver	52.0	0.40%	506.3	0.55%	97.50%	9.74
27	Other Pulmonary	72.0	0.56%	331.5	0.36%	97.86%	4.60
28	Undetermined Injuries	9.3	0.07%	311.8	0.34%	98.20%	33.41
29	Neonatal Complications	4.3	0.03%	297.5	0.32%	98.52%	68.65
30	Musculoskeletal	42.7	0.33%	266.0	0.29%	98.81%	6.23
31	Blood	43.3	0.34%	263.7	0.29%	99.10%	6.08
32	Neoplasms	26.0	0.20%	228.3	0.25%	99.34%	8.78
33	Misc Perinatal	2.3	0.02%	166.8	0.18%	99.53%	71.50
34	All Others	3.3	0.03%	114.7	0.12%	99.65%	34.40
35	Other Perinatal respiratory	1.7	0.01%	98.2	0.11%	99.76%	58.90
36	Upper Respiratory	4.0	0.03%	94.0	0.10%	99.86%	23.50
37	Other Perinatal	1.0	0.01%	74.5	0.08%	99.94%	74.50
38	Pregnancy & Childbirth	0.7	0.01%	32.7	0.04%	99.97%	49.00
39	Skin	3.0	0.02%	24.3	0.03%	100.00%	8.11
	Grand Total	12,915.3	100.00%	92,313.8	100.00%		7.15

Note: Other Injuries includes Poisonings (111.7 deaths, 3,860.7 YPLL, Mean 34.6), Drownings (15.0 deaths, 591.5 YPLL, Mean 39.4) and Falls (79.0 deaths, 532.2 YPLL, Mean 6.7).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Orange County Resident Deaths 1994 - 1996
All Non-Hispanic Blacks
Years Potential Life Lost (YPLL75)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 75	Percent of Total YPLL 75	Cum Pct of Total YPLL 75	Mean YPLL 75
1	Cancer	35.0	22.39%	602.3	16.39%	16.39%	17.21
2	AIDS	11.3	7.25%	433.0	11.78%	28.18%	38.21
3	Prematurity	4.7	2.99%	347.7	9.46%	37.64%	74.50
4	Homicide	6.7	4.26%	325.7	8.86%	46.50%	48.85
5	Other Injuries	7.7	4.90%	270.0	7.35%	53.85%	35.22
6	Motor Vehicle	5.0	3.20%	219.3	5.97%	59.82%	43.87
7	Other Heart	12.7	8.10%	213.0	5.80%	65.62%	16.82
8	Ischemic Heart	26.0	16.63%	211.0	5.74%	71.36%	8.12
9	Suicide	2.7	1.71%	114.3	3.11%	74.47%	42.88
10	COPD	4.3	2.77%	89.7	2.44%	76.91%	20.69
11	Congenital	1.7	1.07%	86.5	2.35%	79.27%	51.90
12	Chronic Liver	2.3	1.49%	79.8	2.17%	81.44%	34.21
13	Cerebrovascular	7.3	4.69%	76.0	2.07%	83.51%	10.36
14	SIDS	1.0	0.64%	74.5	2.03%	85.53%	74.50
15	Infectious & Parasitic	2.0	1.28%	63.8	1.74%	87.27%	31.92
16	Other Vessel	5.0	3.20%	53.7	1.46%	88.73%	10.73
17	Misc Perinatal	0.7	0.43%	49.7	1.35%	90.08%	74.50
18	Hypertensive	4.7	2.99%	44.7	1.22%	91.30%	9.57
19	Genitourinary	2.0	1.28%	40.3	1.10%	92.40%	20.17
20	Blood	1.0	0.64%	39.0	1.06%	93.46%	39.00
21	Other Liver	1.0	0.64%	33.3	0.91%	94.37%	33.33
22	Diabetes	3.0	1.92%	30.3	0.83%	95.19%	10.11
23	All Others	0.7	0.43%	29.3	0.80%	95.99%	44.00
24	Ill-defined	0.7	0.43%	28.3	0.77%	96.76%	42.50
25	Digestive	1.0	0.64%	27.2	0.74%	97.50%	27.17
26	Pneumonia/Influenza	3.3	2.13%	25.7	0.70%	98.20%	7.70
27	Upper Respiratory	0.3	0.21%	24.8	0.68%	98.88%	74.50
28	Mental Disorders	0.7	0.43%	16.7	0.45%	99.33%	25.00
29	Neurologic	0.7	0.43%	7.7	0.21%	99.54%	11.50
30	Other Pulmonary	0.3	0.21%	7.7	0.21%	99.75%	23.00
31	Skin	0.3	0.21%	6.7	0.18%	99.93%	20.00
32	Musculoskeletal	0.7	0.43%	2.7	0.07%	100.00%	4.00
33	Neonatal Complications	0.0	0.00%	-	0.00%	100.00%	0.00
34	Neoplasms	0.0	0.00%	-	0.00%	100.00%	0.00
35	Nondiabetic endocrine	0.0	0.00%	-	0.00%	100.00%	0.00
36	Other Perinatal	0.0	0.00%	-	0.00%	100.00%	0.00
37	Other Perinatal respiriatory	0.0	0.00%	-	0.00%	100.00%	0.00
38	Pregnancy & Childbirth	0.0	0.00%	-	0.00%	100.00%	0.00
39	Undetermined Injuries	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	156.3	100.00%	3,674.3	100.00%		23.50

Note: Other Injuries includes Poisonings (4.7 deaths, 175.0 YPLL, Mean 37.5), Drownings (1.0 deaths, 38.7 YPLL, Mean 38.7) and Falls (0.7 deaths, 0.3 YPLL, Mean 0.5).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Orange County Resident Deaths 1994 - 1996
All Hispanics
Years Potential Life Lost (YPLL75)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 75	Percent of Total YPLL 75	Cum Pct of Total YPLL 75	Mean YPLL 75
1	Homicide	88.0	6.31%	4,452.7	12.86%	12.86%	50.60
2	Cancer	255.3	18.31%	3,873.2	11.18%	24.04%	15.17
3	Congenital	52.3	3.75%	3,685.8	10.64%	34.68%	70.43
4	Other Injuries	67.3	4.83%	2,892.2	8.35%	43.03%	42.95
5	Motor Vehicle	64.3	4.61%	2,818.5	8.14%	51.17%	43.81
6	Prematurity	36.7	2.63%	2,731.7	7.89%	59.06%	74.50
7	AIDS	57.0	4.09%	2,144.0	6.19%	65.25%	37.61
8	Chronic Liver	57.3	4.11%	1,142.3	3.30%	68.55%	19.92
9	Ischemic Heart	208.0	14.91%	1,131.0	3.27%	71.82%	5.44
10	Suicide	22.7	1.63%	1,005.3	2.90%	74.72%	44.35
11	Other Heart	77.0	5.52%	976.7	2.82%	77.54%	12.68
12	Cerebrovascular	64.3	4.61%	736.2	2.13%	79.66%	11.44
13	Diabetes	56.3	4.04%	677.7	1.96%	81.62%	12.03
14	Neurologic	22.3	1.60%	635.0	1.83%	83.46%	28.43
15	Infectious & Parasitic	16.3	1.17%	627.8	1.81%	85.27%	38.44
16	SIDS	8.3	0.60%	615.3	1.78%	87.04%	73.84
17	Pneumonia/Influenza	45.3	3.25%	445.3	1.29%	88.33%	9.82
18	Nondiabetic endocrine	7.7	0.55%	369.0	1.07%	89.40%	48.13
19	Digestive	18.3	1.31%	351.3	1.01%	90.41%	19.16
20	Ill-defined	6.0	0.43%	345.7	1.00%	91.41%	57.61
21	Mental Disorders	16.3	1.17%	290.7	0.84%	92.25%	17.80
22	Misc Perinatal	3.7	0.26%	273.2	0.79%	93.04%	74.50
23	Genitourinary	21.0	1.51%	268.2	0.77%	93.81%	12.77
24	Neonatal Complications	3.3	0.24%	248.3	0.72%	94.53%	74.50
25	Other Liver	12.3	0.88%	229.7	0.66%	95.19%	18.62
26	Undetermined Injuries	4.0	0.29%	217.7	0.63%	95.82%	54.42
27	Musculoskeletal	8.7	0.62%	213.0	0.62%	96.43%	24.58
28	Other Vessel	26.0	1.86%	202.2	0.58%	97.02%	7.78
29	Neoplasms	6.3	0.45%	188.3	0.54%	97.56%	29.74
30	COPD	22.3	1.60%	183.7	0.53%	98.09%	8.22
31	Other Pulmonary	10.7	0.76%	136.3	0.39%	98.49%	12.78
32	Hypertensive	19.3	1.39%	114.3	0.33%	98.82%	5.91
33	Blood	4.7	0.33%	111.3	0.32%	99.14%	23.86
34	Other Perinatal respiratory	1.3	0.10%	99.2	0.29%	99.42%	74.38
35	All Others	1.7	0.12%	83.3	0.24%	99.67%	50.00
36	Pregnancy & Childbirth	1.3	0.10%	66.7	0.19%	99.86%	50.00
37	Other Perinatal	0.3	0.02%	24.7	0.07%	99.93%	74.00
38	Upper Respiratory	0.3	0.02%	24.7	0.07%	100.00%	74.00
39	Skin	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	1,394.7	100.00%	34,632.0	100.00%		24.83

Note: Other Injuries includes Poisonings (35 deaths, 1,400.2 YPLL, Mean 40.0), Drownings (9.3 deaths, 528.2 YPLL, Mean 56.6) and Falls (7.7 deaths, 173.0 YPLL, Mean 22.6).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

Source: Orange County Health Care Agency, Office of Policy Research and Planning, Death Files 1994, 1995 and 1996.

Orange County Resident Deaths 1994 - 1996
All South East Asians
Years Potential Life Lost (YPLL75)

Rank	Cause Group	Average Number of Deaths	Percent of Total Deaths	Average YPLL 75	Percent of Total YPLL 75	Cum Pct of Total YPLL 75	Mean YPLL 75
1	Cancer	86.3	26.87%	1,184.7	20.92%	20.92%	13.72
2	Motor Vehicle	13.7	4.25%	556.7	9.83%	30.76%	40.73
3	Homicide	10.7	3.32%	542.0	9.57%	40.33%	50.81
4	Prematurity	5.7	1.76%	422.2	7.46%	47.79%	74.50
5	Ischemic Heart	50.3	15.66%	323.0	5.71%	53.49%	6.42
6	Congenital	4.7	1.45%	304.3	5.38%	58.87%	65.21
7	Suicide	7.3	2.28%	294.7	5.20%	64.07%	40.18
8	Other Heart	17.3	5.39%	289.5	5.11%	69.18%	16.70
9	Other Injuries	6.7	2.07%	287.8	5.08%	74.27%	43.18
10	Cerebrovascular	25.7	7.99%	220.3	3.89%	78.16%	8.58
11	Infectious & Parasitic	12.3	3.84%	143.7	2.54%	80.70%	11.65
12	COPD	12.3	3.84%	106.3	1.88%	82.58%	8.62
13	SIDS	1.3	0.41%	99.3	1.75%	84.33%	74.50
14	Chronic Liver	6.3	1.97%	96.7	1.71%	86.04%	15.26
15	Pneumonia/Influenza	10.3	3.22%	81.2	1.43%	87.47%	7.85
16	Genitourinary	7.7	2.39%	78.7	1.39%	88.86%	10.26
17	AIDS	1.7	0.52%	70.0	1.24%	90.10%	42.00
18	Digestive	4.3	1.35%	65.8	1.16%	91.26%	15.19
19	Nondiabetic endocrine	2.0	0.62%	60.5	1.07%	92.33%	30.25
20	Hypertensive	7.7	2.39%	56.0	0.99%	93.32%	7.30
21	Neurologic	2.7	0.83%	53.7	0.95%	94.27%	20.13
22	Misc Perinatal	0.7	0.21%	49.7	0.88%	95.14%	74.50
23	Neonatal Complications	0.7	0.21%	49.7	0.88%	96.02%	74.50
24	Diabetes	8.3	2.59%	42.0	0.74%	96.76%	5.04
25	Other Liver	2.7	0.83%	38.3	0.68%	97.44%	14.38
26	Other Vessel	5.0	1.56%	29.0	0.51%	97.95%	5.80
27	Blood	1.0	0.31%	25.2	0.44%	98.40%	25.17
28	Other Perinatal respiriatory	0.3	0.10%	24.8	0.44%	98.83%	74.50
29	Musculoskeletal	1.7	0.52%	22.7	0.40%	99.23%	13.60
30	Other Pulmonary	1.0	0.31%	17.0	0.30%	99.53%	17.00
31	Pregnancy & Childbirth	0.3	0.10%	14.0	0.25%	99.78%	42.00
32	Ill-defined	0.3	0.10%	12.0	0.21%	99.99%	36.00
33	Mental Disorders	1.3	0.41%	0.3	0.01%	100.00%	0.25
34	All Others	0.0	0.00%	-	0.00%	100.00%	#DIV/0!
35	Neoplasms	0.3	0.10%	-	0.00%	100.00%	0.00
36	Other Perinatal	0.0	0.00%	-	0.00%	100.00%	0.00
37	Skin	0.0	0.00%	-	0.00%	100.00%	0.00
38	Undetermined Injuries	0.7	0.21%	-	0.00%	100.00%	0.00
39	Upper Respiratory	0.0	0.00%	-	0.00%	100.00%	0.00
	Grand Total	321.3	100.00%	5,661.7	100.00%		17.62

Note: Other Injuries includes Poisonings (1.3 deaths, 60.3 YPLL, Mean 45.3), Drownings (4.3 deaths, 151.0 YPLL, Mean 34.8) and Falls (2.3 deaths, 20.7 YPLL, Mean 8.9).

COPD is the acronym for Chronic Obstructive Pulmonary Disease

TECHNICAL REPORT
TELEPHONE SURVEY RESEARCH METHODS

Introduction

The Social Science Research Center (SSRC) at California State University, Fullerton functioned as the primary contractor to conduct the residential telephone survey component of the Orange County Healthcare Needs Assessment. Data were collected from individuals aged 18 years and older residing in 5,043 randomly selected households located in the service areas of 24 Orange County-based hospitals. The SSRC contributed to the collaborative which developed the survey instrumentation, then programmed these instruments for administration in its computer-assisted telephone interviewing (CATI) laboratory, and performed primary data collection and all foreign language interviewing (Spanish, Vietnamese, and Korean). The SSRC utilizes the Ci3 CATI software package; the same system supported by the Centers for Disease Control and Prevention (CDC) to administer the Behavioral Risk Factor Surveillance System (BRFSS) survey questionnaire.

The sample was developed in consultation with Scientific Telephone Samples (STS), a proprietary firm specializing in the production of Random Digit Dial (RDD) telephone samples. Additional data collection utilizing this CATI programming and a cross section of the sample was subcontracted to the Social and Behavioral Research Institute (SBRI) under the direction of Dr. Richard Serpe at CSU San Marcos. Post-stratification population weights were developed by Dr. Robert Newcomb and Mr. Christopher Hanks at the Center for Statistical Consulting, University of California, Irvine. County population data for these postsampling computations was provided by Dr. William Gayk at the Center for Demographic Research, CSU Fullerton.

The collaborative elected to utilize items in the Orange County Health Care Needs Assessment survey instrument from the fixed core of the BRFSS including queries about current health status, health care access, exercise, tobacco use, HIV/ AIDS, and demographics. Additionally, items from optional modules covering diabetes, sexual behavior, family planning, health care coverage and utilization, oral health, injury control, immunizations, alcohol consumption, quality of life, and firearms were included.

Sample Selection

The Sample Frame
The sample frame for this study consists of households with telephones located in the service areas of 24 Orange County-based hospitals. The population of inference is noninstitutionalized civilians aged 18 years or older residing in households with telephones. Persons in institutions including penal facilities, hospitals, military barracks, and some college dormitories are excluded from the sample frame.

The CDC reports that 95% of households in the United States have telephones, although coverage varies from 87% to 98% across states and varies between population subgroups as well. Telephone company estimates indicate the penetration of telephones in households in Orange County to be 98.5%. Thus, 1.5% of residential households have a zero probability of inclusion in any telephone sample survey. It is known that telephone coverage among minorities and lower socioeconomic groups is lower than among those in majority racial/ethnic groups and those in higher socioeconomic categories. No direct method of compensating for non-telephone coverage is employed by the BRFSS nor in the Orange County Healthcare Needs Assessment telephone survey. However, in both cases, poststratification weights are used that may partially correct for any bias caused by non-telephone coverage.

A detailed technical report is available and can be reviewed upon request by contacting Pamela Austin, MSW, OCHNA Project Director at 714/547-3631.

A TECHNICAL REPORT ON THE IMPUTATION OF HOUSEHOLD INCOME DATA FOR THE ORANGE COUNTY HEALTH NEEDS ASSESSMENT SURVEY

Report prepared by Azhar K. Qureshi, MD, MPH, DrPH
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Consultant to the OCHNA Project

Introduction

This report details the result of imputing household income data and the methods used to obtain them. Of the 5,043 survey respondents, 781 (15.5%) refused to answer the question (or did not respond) on annual household income. Given the well-known impact of income on health status, it was decided to impute the missing data on income. Of the 781 missing values, 696 (89.1%) were successfully imputed via the *multiple imputation* method discussed below. Table 1 and Table 2 show the distribution of annual household income in Orange County, both pre-imputation and post-imputation.

Table 1. Distribution of Annual Household Income in Orange County, Pre-Imputation.

Income Category	Frequency*	Percent	Cumulative Percent
Less than $10,000	222	4.4	4.4
$10,000 – $14,999	267	5.3	9.7
$15,000 – $19,999	246	4.9	14.6
$20,000 – $24,999	285	5.6	20.2
$25,000 – $34,999	505	10.0	30.2
$35,000 – $49,999	669	13.3	43.5
$50,000 – $74,999	913	18.1	61.6
$75,000 or more	1258	24.9	86.5
Missing values	678	13.5	100
Total	5043	100	100

* Population weighted frequency distribution

Table 2. Distribution of Annual Household Income in Orange County, Post-Imputation.

Income Category	Frequency*	Percent	Cumulative Percent
Less than $10,000	229	4.5	4.5
$10,000 – $14,999	271	5.4	9.9
$15,000 – $19,999	302	6.0	15.9
$20,000 – $24,999	395	7.8	23.7
$25,000 – $34,999	670	13.3	37.0
$35,000 – $49,999	833	16.5	53.5
$50,000 – $74,999	1037	20.6	74.1
$75,000 or more	1279	25.4	99.5
Missing values	26	.5	100
Total	5043	100	100

* Population weighted frequency distribution

The Multiple Imputation Model

Single imputation refers to the method whereby each missing value in a data set is filled in with 1 value, yielding 1 complete data set. The important disadvantage of single imputation is that the single value being imputed cannot itself reflect the sampling variability about the actual value. Therefore, analyses that treat imputed values like observed values will systematically underestimate uncertainty. Neither can it reflect the uncertainty that may arise when the reasons for non-response are not known.

Multiple imputation, first proposed by Rubin in the early 1970s as a possible solution to the problem of survey non-response, corrects the major problems associated with single imputation. The idea behind multiple imputation is that for each missing value in a data set, we impute several values (M) instead of just one. The first set of the M imputed values is used to form the first completed data set, and so on.

By imputing several copies of the missing data, and then computing whatever statistic one wishes in each of the completed data sets as if they were the real data, one can assess the true uncertainty in the statistic by an analysis of the variance "within" and "between" imputations. Once the multiple imputation procedure is complete, one will have M complete data sets, each of which can be analyzed using standard complete-data statistical methods. Note that, done right, multiple imputation provides *unbiased* estimates for all parameters of interest.

For the OCHNA survey, we imputed 5 values for each missing value in the data set. Following which, we assigned, for each missing value in the data set, the average of the 5 imputed values to obtain an almost complete data set for annual household income data. The distribution of income data obtained as a result of multiple imputation is shown above in Table 2.

The following variables were used for imputing the income data: age, gender, race, education level, employment status, marital status, and home ownership. A respondent's education level was found to be the most important predictor of household income.

We created a temporary variable to be used as the dependent variable in a logistic regression model. This temporary variable equals 0 for every case with missing data on income and equals 1 otherwise. We used an implicit model based approach based on Propensity Scores[1] and an approximate Bayesian Bootstrap to generate the imputations. The multiple imputations are independent repetitions from a *posterior predictive distribution* for the missing data given the observed data.

We tested the fit of the model via 3 different statistical tests,[2] test results revealed that the model is adequate and fits the data well. Note that each of these tests checks a different aspect of the model. The goodness-of-fit test compares the observed and predicted frequencies for each cell in the data. The Hosmer-Lemeshow test compares the observed and predicted frequencies for up to 10 cells; cells are defined by the observed probabilities. The C. C. Brown test compares the fit of the data to the logistic model or to an alternate member of a family of models.

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[1] Propensity score equals the conditional probability of a missing datum computed from a vector of observed covariates.

[2] The Chi-square goodness-of-fit test ($p = 0.260$), the Hosmer-Lemeshow Test ($p = 0.158$) and the C. C. Brown Test ($p = 0.493$). For details on these tests, see Hosmer, D. W., and Lemeshow, S. (1989). *Applied Logistic Regression*. New York: John Wiley.

ACCESS RESEARCH REPORT
ORANGE COUNTY HEALTH NEEDS ASSESSMENT SURVEY

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Introduction

This report is based on the analysis of the OCHNA survey data collected over the period May 16, 1998 to October 16, 1998. The data were collected via CATI technique and utilized the RDD method for respondent selection. Two independent surveys were conducted; one survey collected data from 2,487 adult (age ≥ 18 years) residents on health and health care variables while the other survey collected data from 2,556 adult residents on life style and behavioral factors. Since the 2 surveys contained many questions in common, these common questions were grouped into a combined data file that contains data on 5,043 respondents. Results presented in this report are based on the analysis of data in this combined data file.

Population Weighting[3]

Prior to analysis, current demographic information on Orange County residents was obtained and used to develop case weights so that unbiased population estimates can be computed from the sample data. Information on 3 demographic variables (gender, age, and race) was used to develop the case weights (combination of these 3 variables yielded 30 population strata). Table 1 (see next page) shows the population strata and the corresponding case weights used for weighting the sample data.

Missing Data

Demographic data were missing for 2 of the 3 variables (age and race) used for forming population strata. A weight of zero was assigned to the cases with missing data on these 2 variables leading to a 3% reduction in the sample size from 5,043 to 4,893.

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[3] Author acknowledges the assistance provided by Greg Robinson, PhD, in developing the case weights. The source of demographic data shown in Table 1 is the Center for Demographic Research (CDR), California State University, Fullerton; January 1, 1995 estimates.

Table 1. Population strata and weights used for developing case weights for the OCHNA survey

Strata	Population	Pop weight	Sample	Sample weight	Adj. Factor	Case weight
White Male 18-34	199150	0.10374	270	0.05518	1.88008	0.00038
Hispanic Male 18-34	144137	0.07509	252	0.05150	1.45792	0.00030
Vietnamese Male 18-34	21200	0.01104	71	0.01451	0.76109	0.00016
API* Male 18-34	22670	0.01181	53	0.01083	1.09027	0.00022
All other races Male 18-34	10775	0.00561	40	0.00817	0.68662	0.00014
White Male 35-54	250708	0.13060	427	0.08727	1.49658	0.00031
Hispanic Male 35-54	73174	0.03812	131	0.02677	1.42379	0.00029
Vietnamese Male 35-54	15342	0.00799	116	0.02371	0.33712	0.00007
API Male 35-54	27536	0.01434	31	0.00634	2.26411	0.00046
All other races Male 35-54	8804	0.00459	55	0.01124	0.40802	0.00008
White Male 55+	151754	0.07905	298	0.06090	1.29803	0.00027
Hispanic Male 55+	21240	0.01106	29	0.00593	1.86688	0.00038
Vietnamese Male 55+	6228	0.00324	53	0.01083	0.29952	0.00006
API Male 55+	10237	0.00533	18	0.00368	1.44964	0.00030
All other races Male 55+	2373	0.00124	12	0.00245	0.50405	0.00010
White Female 18-34	187836	0.09785	418	0.08543	1.14541	0.00023
Hispanic Female 18-34	105794	0.05511	397	0.08114	0.67925	0.00014
Vietnamese Female 18-34	18925	0.00986	88	0.01798	0.54817	0.00011
API Female 18-34	23279	0.01213	46	0.00940	1.28993	0.00026
All other races Female 18-34	9121	0.00475	57	0.01165	0.40787	0.00008
White Female 35-54	248002	0.12919	823	0.16820	0.76809	0.00016
Hispanic Female 35-54	65813	0.03428	240	0.04905	0.69897	0.00014
Vietnamese Female 35-54	15254	0.00795	135	0.02759	0.28801	0.00006
API Female 35-54	29727	0.01549	51	0.01042	1.48573	0.00030
All other races Female 35-54	8073	0.00421	52	0.01063	0.39572	0.00008
White Female 55+	193910	0.10101	553	0.11302	0.89379	0.00018
Hispanic Female 55+	26178	0.01364	90	0.01839	0.7414	0.00015
Vietnamese Female 55+	6704	0.00349	54	0.01104	0.31645	0.00006
API Female 55+	13147	0.00685	9	0.00184	3.72343	0.00076
All other races Female 55+	2532	0.00132	24	0.00490	0.26891	0.00006
Totals	1,919,623	1.00000	4,893	1.00000	N/A	N/A

Note that API stands for all other Asians or Pacific Islanders, except for the Vietnamese population

Survey Sample Versus the County Population

Perusal of Table 1 indicates the distribution of sample cases across the strata differ significantly from their expected values given their population distribution (chi-square 479.17, df = 1, p-value< .0001). This observation justifies the use of population weights to obtain unbiased estimates for the population.

Orange County's Current Population Estimates[4]

According to estimates published by the Demographic Research Unit, Orange County's total population (as of 1-1-97) is estimated to be 2,659,300 or 2.66 million people. These estimates are based on the 1990 census data; Orange County's population was estimated to be 2,443,500 people on January 1, 1991. The Average Annual Rate of Increase (AARI) in the 6-year period between 1991 to 1997 is 1.42%.[5] As of January 1, 1999, applying an AARI of 1.42% to the base, we estimate Orange County's population to be equal to 2,735,388 or 2.735 million residents.

Orange County's Adult Population

As of January 1, 1995, Orange County's adult (≥ 18 years of age) was estimated to be 1,919,623 or 1.92 million adults. As of January 1, 1999, using the AARI given above, we estimate Orange County's adult population to be equal to 2,031,044 or 2.03 million adults. By subtracting the adult population from the total population, we estimate Orange County's child (< 18 years of age) population to be equal to 704,344 children.

Orange County's Household Demographics

We sampled 5,043 adult residents (≥ 18 years of age); note that each respondent in the survey represents 1 household. Our estimates based on the survey data show that the average number of adults per household is 1.810 adults (95% confidence interval: 1.796 to 1.824) that yields an estimate of 1,122,124 or 1.122 million households (95% confidence interval: 1,113,510 to 1,130,871 households) for Orange County, as of January1, 1999.

Based on the survey data, our estimates also show that the total number of households with children (<18 years of age) living in them is 476,903 or 477,000 households (95% confidence interval: 461,193 to 493,735 households). That is, 42.5% of the county households are child-inhabited (95% confidence interval: 41.1% to 44.0%). Furthermore, the average number of children living per child-inhabited household is 1.645 (95% confidence interval: 1.618 to 1.672). Thus, as of January 1, 1999, our most conservative estimate for Orange County's child population is 746,210 children. This estimate is fairly close to 704,344 – the estimate of child population computed by subtracting the adult population from the total population shown above.

Note that all the population estimates presented for adults (≥18) in this report assume a total adult population of 2,031,044 adults, as of January 1, 1999. Also, note that all of the population estimates presented for children (<18) in this report assume a total child population of 704,344 children, as of January 1, 1999.

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[4] The source of demographic data presented in this report is the California Department of Finance: Demographic Research Unit.

[5] AARI = 1- $^t\sqrt{Qi/Qo}$ times 100; Qi = the latest time period, Qo = the initial time period and t = the number of years between the two time periods.

Orange County's Demographic Information by Gender, Age, and Race

Table 2 presents current estimates for Orange County's adult population (≥ 18) by age, gender and major racial groups residing in the County. It is obvious from data shown in Table 2 that whites and Hispanics are the 2 major racial groups with whites forming almost two thirds of the County's population and Hispanics approximately one fourth. Also, note that almost one fourth of the County's population is over age 54. As of January 1, 1999, the total county population (adults and children) is estimated to be 2,735,388 including 25.75% children under age 18. Note that population numbers shown in Table 2 are computed based on the assumption that the distribution of adult population reported by the Center for Demographic Research, Cal. State, Fullerton on January 1, 1995 applies unchanged to the population as of January 1, 1999.

Table 2. Orange county's adult population estimates by age, gender and race.

Population Category	Adult Population	Population percentage
Adult Males	1,021,412	50.29%
Adult Females	1,009,632	49.71%
Age: 18-34	786,014	38.70%
Age: 35-54	785,608	38.68%
Age: 55 and older	459,422	22.62%
Age: 65 and older	254,896	12.55%
Whites	1,302,915	64.15%
Hispanics	461,656	22.73%
Vietnamese	88,553	4.36%
Other API*	133,846	6.59%
All other races	44,074	2.17%

* Asians and Pacific Islanders, excluding Vietnamese

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